GA-M68M-S2P

AM2+/AM2 socket motherboard for
AMD Phenom™ II processor/ AMD Phenom™ processor/
AMD Athlon™ II processor/ AMD Athlon™ processor/
AMD Sempron™ processor

User's Manual

Rev. 2301
12ME-M68MS2P-2301R

Declaration of Conformity

We, Manufacturer/Importer
(full address)

G.B.T. Technology Trading GMbH
Bullenkoppel 16, 22047 Hamburg, Germany

declare that the product
(description of the apparatus, system, installation to which it refers)

Motherboard
GA-M68M-S2P

is in conformity with
(reference to the specification under which conformity is declared)
in accordance with 2004/108/EC EMC Directive

☐ **EN 55011**	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) high frequency equipment	☒ **EN 61000-3-2**	Disturbances in supply systems caused
		☒ **EN 61000-3-3**	Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations"
☐ **EN 55013**	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☒ **EN 55024**	Information Technology equipment-Immunity characteristics-Limits and methods of measurement
☐ **EN 55014-1**	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus	☐ **EN 50082-1**	Generic immunity standard Part 1: Residual, commercial and light industry
		☐ **EN 50082-2**	Generic immunity standard Part 2: Industrial environment
☐ **EN 55015**	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	☐ **EN 55014-2**	Immunity requirements for household appliances tools and similar apparatus
☐ **EN 55020**	Immunity from radio interference of broadcast receivers and associated equipment	☐ **EN 50091- 2**	EMC requirements for uninterruptible power systems (UPS)
☒ **EN 55022**	Limits and methods of measurement of radio disturbance characteristics of information technology equipment		
☐ **DIN VDE 0855** ☐ **part 10** ☐ **part 12**	Cabled distribution systems; Equipment for receiving and/or distribution from sound and television signals		

☒ **CE marking** (EC conformity marking)

The manufacturer also declares the conformity of above mentioned product with the actual required safety standards in accordance with LVD 2006/95/EC

☐ **EN 60065**	Safety requirements for mains operated electronic and related apparatus for household and similar general use	☒ **EN 60950**	Safety for information technology equipment including electrical business equipment
☐ **EN 60335**	Safety of household and similar electrical appliances	☐ **EN 50091-1**	General and Safety requirements for uninterruptible power systems (UPS)

Manufacturer/Importer

Signature : *Timmy Huang*

(Stamp) Date : May 17, 2010 Name : Timmy Huang

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)

Responsible Party Name: G.B.T. INC. (U.S.A.)

Address: 17358 Railroad Street
City of Industry, CA 91748

Phone/Fax No: (818) 854-9338/ (818) 854-9339

hereby declares that the product

Product Name: Motherboard

Model Number: GA-M68M-S2P

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109 (a),Class B Digital Device

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful and (2) this device must accept any inference received, including that may cause undesired operation.

Representative Person's Name: ERIC LU

Signature: *Eric Lu*

Date: May 17, 2010

Copyright

© 2010 GIGA-BYTE TECHNOLOGY CO., LTD. All rights reserved.
The trademarks mentioned in this manual are legally registered to their respective owners.

Disclaimer

Information in this manual is protected by copyright laws and is the property of GIGABYTE. Changes to the specifications and features in this manual may be made by GIGABYTE without prior notice. No part of this manual may be reproduced, copied, translated, transmitted, or published in any form or by any means without GIGABYTE's prior written permission.

Documentation Classifications

In order to assist in the use of this product, GIGABYTE provides the following types of documentations:

- For detailed product information, carefully read the User's Manual.
- For instructions on how to use GIGABYTE's unique features, read or download the information on/from the Support&Downloads\Motherboard\Technology Guide page on our website.

For product-related information, check on our website at:
http://www.gigabyte.com.tw

Identifying Your Motherboard Revision

The revision number on your motherboard looks like this: "REV: X.X." For example, "REV: 1.0" means the revision of the motherboard is 1.0. Check your motherboard revision before updating motherboard BIOS, drivers, or when looking for technical information.

Example:

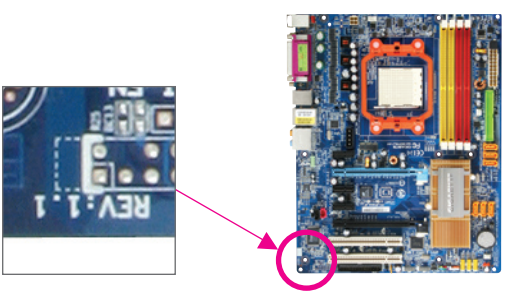


Table of Contents

Box Contents 6
Optional Items 6
GA-M68M-S2P Motherboard Layout 7
GA-M68M-S2P Motherboard Block Diagram 8

Chapter 1 Hardware Installation 9
1-1 Installation Precautions 9
1-2 Product Specifications 10
1-3 Installing the CPU and CPU Cooler 13
1-3-1 Installing the CPU 13
1-3-2 Installing the CPU Cooler 15
1-4 Installing the Memory 16
1-4-1 Dual Channel Memory Configuration 16
1-4-2 Installing a Memory 17
1-5 Installing an Expansion Card 18
1-6 Back Panel Connectors 19
1-7 Internal Connectors 21

Chapter 2 BIOS Setup 29
2-1 Startup Screen 30
2-2 The Main Menu 31
2-3 MB Intelligent Tweaker(M.I.T.) 33
2-4 Standard CMOS Features 36
2-5 Advanced BIOS Features 38
2-6 Integrated Peripherals 40
2-7 Power Management Setup 42
2-8 PnP/PCI Configurations 44
2-9 PC Health Status 45
2-10 Load Fail-Safe Defaults 47
2-11 Load Optimized Defaults 47
2-12 Set Supervisor/User Password 48
2-13 Save & Exit Setup 49
2-14 Exit Without Saving 49

Chapter 3 Drivers Installation....51
3-1 Installing Chipset Drivers....51
3-2 Application Software....52
3-3 Technical Manuals....52
3-4 Contact....53
3-5 System....53
3-6 Download Center....54
3-7 New Utilities....54

Chapter 4 Unique Features....55
4-1 Xpress Recovery2....55
4-2 BIOS Update Utilities....58
4-2-1 Updating the BIOS with the Q-Flash Utility....58
4-2-2 Updating the BIOS with the @BIOS Utility....61
4-3 EasyTune 6....62
4-4 Auto Green....63

Chapter 5 Appendix....65
5-1 Configuring SATA Hard Drive(s)....65
5-1-1 Configuring the Onboard SATA Controller....65
5-1-2 Making a SATA RAID Driver Diskette....70
5-1-3 Installing the SATA RAID Driver and Operating System....71
5-2 Configuring Audio Input and Output....75
5-2-1 Configuring 2/4/5.1/7.1-Channel Audio....75
5-2-2 Configuring S/PDIF In/Out....78
5-2-3 Configuring Microphone Recording....80
5-2-4 Using the Sound Recorder....82
5-3 Troubleshooting....83
5-3-1 Frequently Asked Questions....83
5-3-2 Troubleshooting Procedure....84
5-4 Regulatory Statements....86

Box Contents

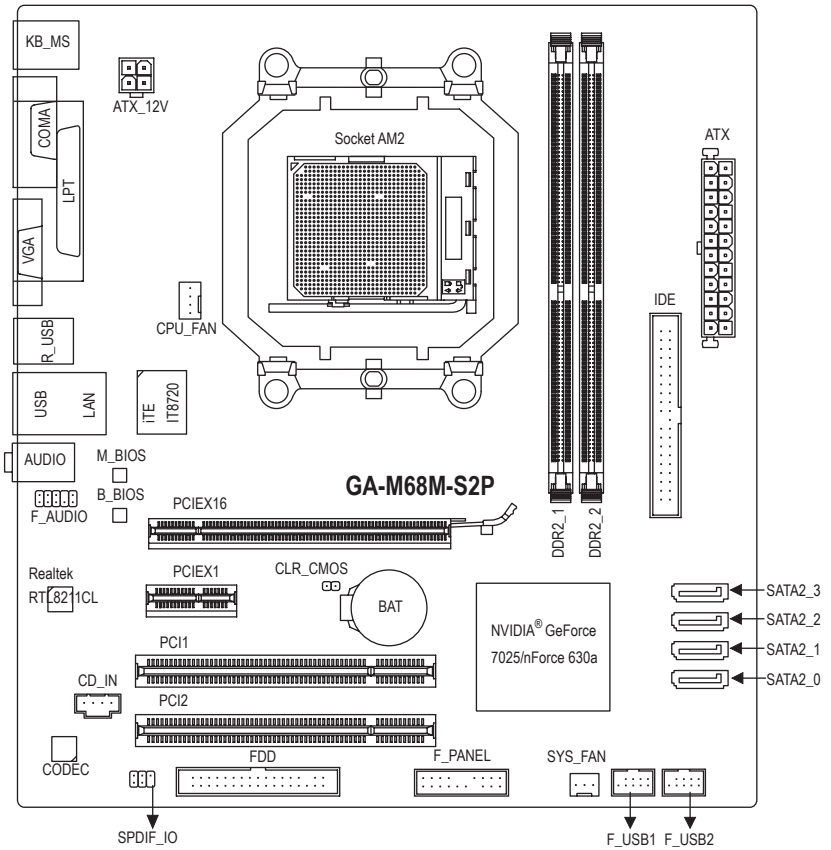
- ☑ GA-M68M-S2P
- ☑ Motherboard driver disk
- ☑ User's Manual
- ☑ One IDE cable
- ☑ One SATA cable
- ☑ I/O Shield

- The box contents above are for reference only and the actual items shall depend on the product package you obtain. The box contents are subject to change without notice.
- The motherboard image is for reference only.

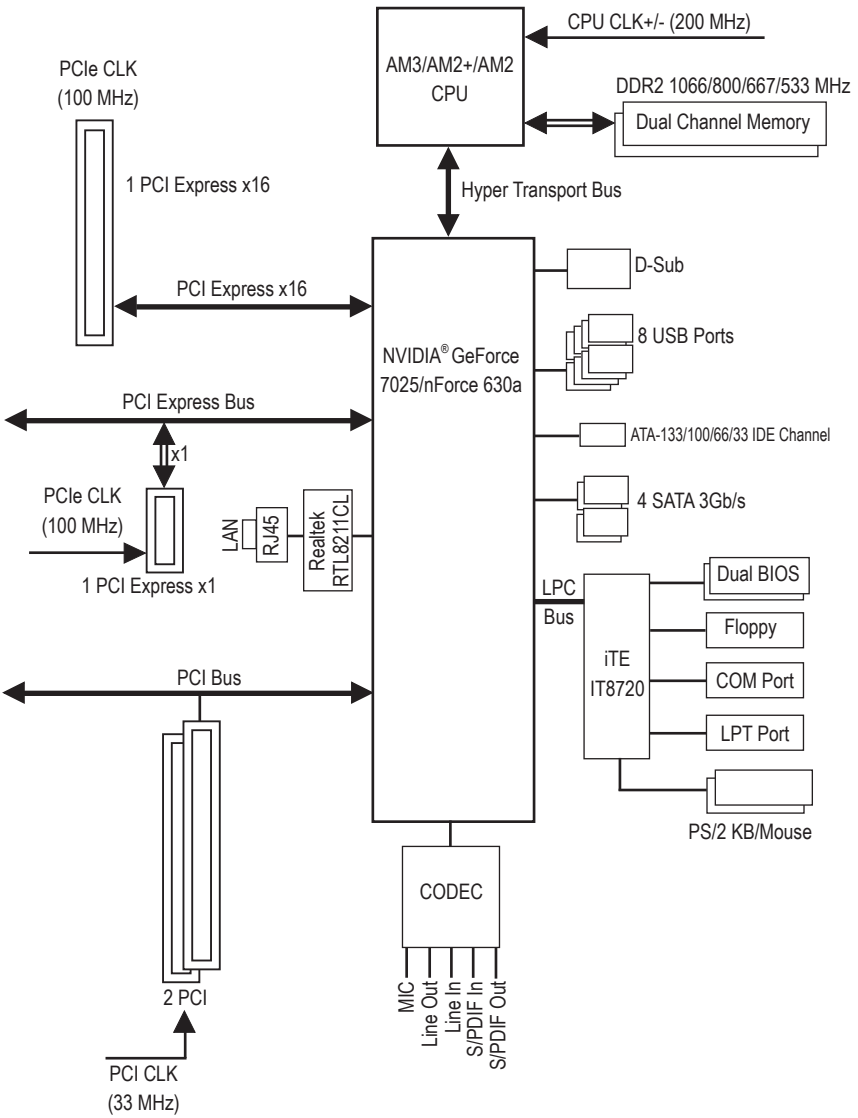
Optional Items

- ☐ Floppy disk drive cable (Part No. 12CF1-1FD001-7*R)
- ☐ 2-port USB 2.0 bracket (Part No. 12CR1-1UB030-5*R)
- ☐ 2-port SATA power cable (Part No. 12CF1-2SERPW-0*R)
- ☐ S/PDIF In and Out cable (Part No. 12CR1-1SPINO-1*R)

GA-M68M-S2P Motherboard Layout



GA-M68M-S2P Motherboard Block Diagram



Chapter 1 Hardware Installation

1-1 Installation Precautions

The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the user's manual and follow these procedures:

- Prior to installation, do not remove or break motherboard S/N (Serial Number) sticker or warranty sticker provided by your dealer. These stickers are required for warranty validation.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.
- When connecting hardware components to the internal connectors on the motherboard, make sure they are connected tightly and securely.
- When handling the motherboard, avoid touching any metal leads or connectors.
- It is best to wear an electrostatic discharge (ESD) wrist strap when handling electronic components such as a motherboard, CPU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity.
- Prior to installing the motherboard, please have it on top of an antistatic pad or within an electrostatic shielding container.
- Before unplugging the power supply cable from the motherboard, make sure the power supply has been turned off.
- Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard.
- Before using the product, please verify that all cables and power connectors of your hardware components are connected.
- To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components.
- Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- Do not place the computer system on an uneven surface.
- Do not place the computer system in a high-temperature environment.
- Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

1-2 Product Specifications

CPU	◆ Support for AM3/AM2+/AM2 processors: AMD Phenom™ II processor/ AMD Phenom™ processor/ AMD Athlon™ II processor/ AMD Athlon™ processor/ AMD Sempron™ processor (Go to GIGABYTE's website for the latest CPU support list.)
Hyper Transport Bus	◆ 2000 MT/s
Chipset	◆ NVIDIA® GeForce 7025/nForce 630a
Memory	◆ 2 x 1.8V DDR2 DIMM sockets supporting up to 8 GB of system memory (Note 1) ◆ Dual channel memory architecture ◆ Support for DDR2 1066/800/667/533 MHz memory modules (Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
Onboard Graphics	◆ Integrated in the Chipset: - 1 x D-Sub port
Audio	◆ Realtek ALC888B codec ◆ High Definition Audio ◆ 2/4/5.1/7.1-channel (Note 2) ◆ Support for S/PDIF Out ◆ Support for S/PDIF In ◆ Support for CD In
LAN	◆ Realtek RTL8211CL chip (10/100/1000 Mbit)
Expansion Slots	◆ 1 x PCI Express x16 slot, running at x16 ◆ 1 x PCI Express x1 slot ◆ 2 x PCI slots
Storage Interface	◆ Chipset: - 1 x IDE connector supporting ATA-133/100/66/33 and up to 2 IDE devices - 4 x SATA 3Gb/s connectors supporting up to 4 SATA 3Gb/s devices - Support for SATA RAID 0, RAID 1, RAID 10, RAID 5, and JBOD ◆ iTE IT8720 chip: - 1 x floppy disk drive connector supporting up to 1 floppy disk drive
USB	◆ Chipset - Up to 8 USB 2.0/1.1 ports (4 on the back panel, 4 via the USB brackets connected to the internal USB headers)

Internal Connectors	◆	1 x 24-pin ATX main power connector
	◆	1 x 4-pin ATX 12V power connector
	◆	1 x floppy disk drive connector
	◆	1 x IDE connector
	◆	4 x SATA 3Gb/s connectors
	◆	1 x CPU fan header
	◆	1 x system fan header
	◆	1 x front panel header
	◆	1 x front panel audio header
	◆	1 x CD In connector
	◆	1 x S/PDIF In/Out header
	◆	2 x USB 2.0/1.1 headers
	◆	1 x clearing CMOS jumper
Back Panel Connectors	◆	1 x PS/2 keyboard port
	◆	1 x PS/2 mouse port
	◆	1 x D-Sub port
	◆	1 x parallel port
	◆	1 x serial port
	◆	4 x USB 2.0/1.1 ports
	◆	1 x RJ-45 port
	◆	3 x audio jacks (Line In/Line Out/Microphone)
I/O Controller	◆	iTE IT8720 chip
Hardware Monitor	◆	System voltage detection
	◆	CPU/System temperature detection
	◆	CPU/System fan speed detection
	◆	CPU/System overheating warning
	◆	CPU/System fan fail warning
	◆	CPU fan speed control (Note 3)
BIOS	◆	2 x 8 Mbit flash
	◆	Use of licensed AWARD BIOS
	◆	Support for DualBIOS™
	◆	PnP 1.0a, DMI 2.0, SM BIOS 2.4, ACPI 1.0b

Unique Features	◆	Support for @BIOS ◆ Support for Q-Flash ◆ Support for Xpress BIOS Rescue ◆ Support for Download Center ◆ Support for Xpress Install ◆ Support for Xpress Recovery2 ◆ Support for EasyTune (Note 4) ◆ Support for Auto Green ◆ Support for ON/OFF Charge
Bundled Software	◆	Norton Internet Security (OEM version)
Operating System	◆	Support for Microsoft® Windows® 7/Vista/XP
Form Factor	◆	Micro ATX Form Factor; 24.4cm x 22.5cm

(Note 1) Due to Windows 32-bit operating system limitation, when more than 4 GB of physical memory is installed, the actual memory size displayed will be less than 4 GB.

(Note 2) To configure 7.1-channel audio, you have to use an HD front panel audio module and enable the multi-channel audio feature through the audio driver.

(Note 3) Whether the CPU fan speed control function is supported will depend on the CPU cooler you install.

(Note 4) Available functions in EasyTune may differ by motherboard model.

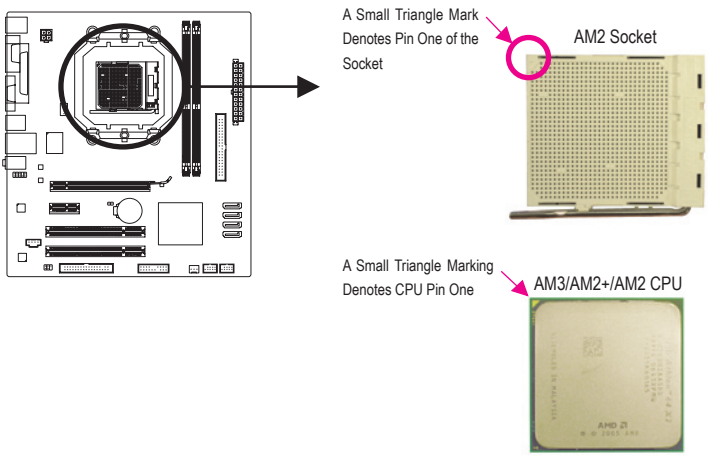
1-3 Installing the CPU and CPU Cooler

Read the following guidelines before you begin to install the CPU:

- Make sure that the motherboard supports the CPU.
  (Go to GIGABYTE's website for the latest CPU support list.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the CPU to prevent hardware damage.
- Locate the pin one of the CPU. The CPU cannot be inserted if oriented incorrectly. (Or you may locate the notches on both sides of the CPU and alignment keys on the CPU socket.)
- Apply an even and thin layer of thermal grease on the surface of the CPU.
- Do not turn on the computer if the CPU cooler is not installed, otherwise overheating and damage of the CPU may occur.
- Set the CPU host frequency in accordance with the CPU specifications. It is not recommended that the system bus frequency be set beyond hardware specifications since it does not meet the standard requirements for the peripherals. If you wish to set the frequency beyond the standard specifications, please do so according to your hardware specifications including the CPU, graphics card, memory, hard drive, etc.

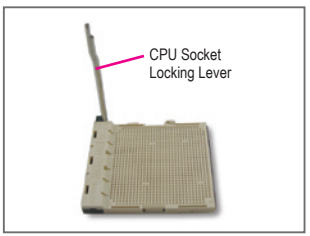
1-3-1 Installing the CPU

A. Locate the pin one (denoted by a small triangle) of the CPU socket and the CPU.

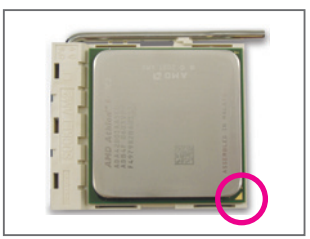

A Small Triangle Mark Denotes Pin One of the Socket
AM2 Socket
A Small Triangle Marking Denotes CPU Pin One
AM3/AM2+/AM2 CPU

B. Follow the steps below to correctly install the CPU into the motherboard CPU socket.

- Before installing the CPU, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the CPU.
- Do not force the CPU into the CPU socket. The CPU cannot fit in if oriented incorrectly. Adjust the CPU orientation if this occurs.



Step 1:
Completely lift up the CPU socket locking lever.

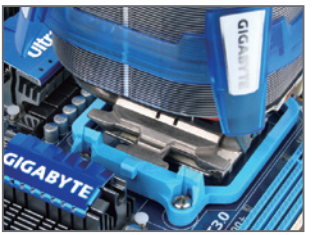


Step 2:
Align the CPU pin one (small triangle marking) with the triangle mark on the CPU socket and gently insert the CPU into the socket. Make sure that the CPU pins fit perfectly into their holes. Once the CPU is positioned into its socket, place one finger down on the middle of the CPU, lowering the locking lever and latching it into the fully locked position.

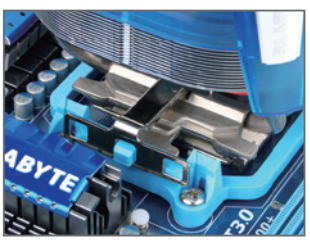
1-3-2 Installing the CPU Cooler

Follow the steps below to correctly install the CPU cooler on the CPU. (The following procedure uses the GIGABYTE cooler as the example.)

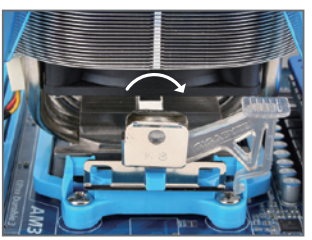
Step 1:
Apply an even and thin layer of thermal grease on the surface of the installed CPU.



Step 2:
Place the CPU cooler on the CPU.



Step 3:
Hook the CPU cooler clip to the mounting lug on one side of the retention frame. On the other side,push straight down on the the CPU cooler clip to hook it to the mounting lug on the retention frame.



Step 4:
Turn the cam handle from the left side to the right side (as the picture above shows) to lock into place. (Refer to your CPU cooler installation manual for instructions on installing the cooler.)

Step 5:
Finally, attach the power connector of the CPU cooler to the CPU fan header (CPU_FAN) on the motherboard.

Use extreme care when removing the CPU cooler because the thermal grease/tape between the CPU cooler and CPU may adhere to the CPU. Inadequately removing the CPU cooler may damage the CPU.

1-4 Installing the Memory

Read the following guidelines before you begin to install the memory:

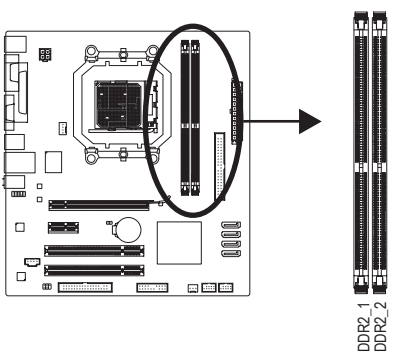
- Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.
  (Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.
- Memory modules have a foolproof design. A memory module can be installed in only one direction. If you are unable to insert the memory, switch the direction.

1-4-1 Dual Channel Memory Configuration

This motherboard provides two DDR2 memory sockets and supports Dual Channel Technology. After the memory is installed, the BIOS will automatically detect the specifications and capacity of the memory. Enabling Dual Channel memory mode will double the original memory bandwidth.

The two DDR2 memory sockets are divided into two channels as following:

- Channel 0: DDR2_1
- Channel 1: DDR2_2

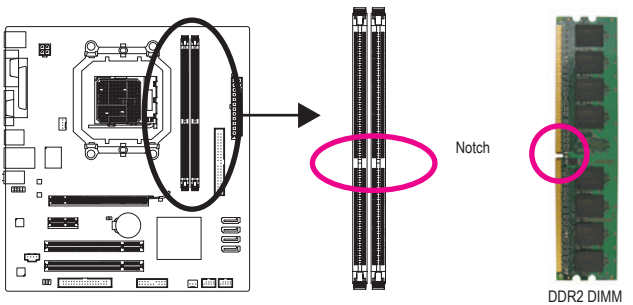


Due to CPU limitation, read the following guidelines before installing the memory in Dual Channel mode.

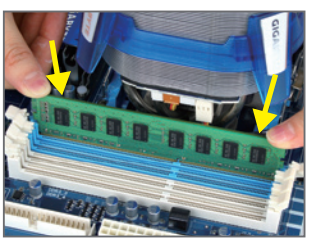
1. Dual Channel mode cannot be enabled if only one DDR2 memory module is installed.
2. When enabling Dual Channel mode with two memory modules, it is recommended that memory of the same capacity, brand, speed, and chips be used.

1-4-2 Installing a Memory

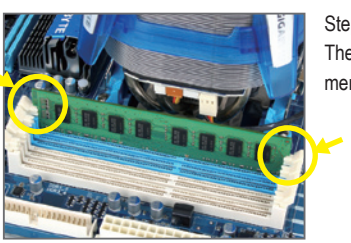
Before installing a memory module , make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the memory module.
DDR2 DIMMs are not compatible to DDR DIMMs. Be sure to install DDR2 DIMMs on this motherboard.



A DDR2 memory module has a notch, so it can only fit in one direction. Follow the steps below to correctly install your memory modules in the memory sockets.



Step 1:
Note the orientation of the memory module. Spread the retaining clips at both ends of the memory socket. Place the memory module on the socket. As indicated in the picture on the left, place your fingers on the top edge of the memory, push down on the memory and insert it vertically into the memory socket.

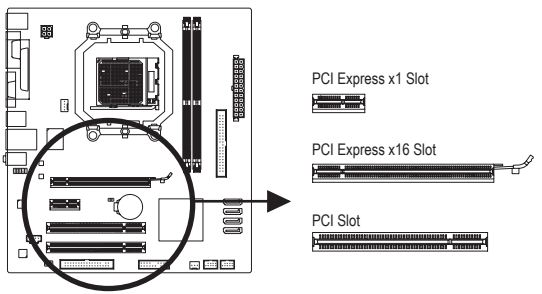


Step 2:
The clips at both ends of the socket will snap into place when the memory module is securely inserted.

1-5 Installing an Expansion Card

Read the following guidelines before you begin to install an expansion card:

- Make sure the motherboard supports the expansion card. Carefully read the manual that came with your expansion card.
- Always turn off the computer and unplug the power cord from the power outlet before installing an expansion card to prevent hardware damage.



Follow the steps below to correctly install your expansion card in the expansion slot.

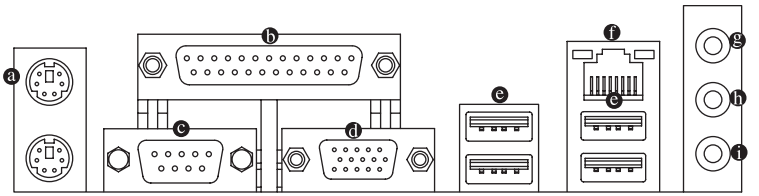
1. Locate an expansion slot that supports your card. Remove the metal slot cover from the chassis back panel.
2. Align the card with the slot, and press down on the card until it is fully seated in the slot.
3. Make sure the metal contacts on the card are completely inserted into the slot.
4. Secure the card's metal bracket to the chassis back panel with a screw.
5. After installing all expansion cards, replace the chassis cover(s).
6. Turn on your computer. If necessary, go to BIOS Setup to make any required BIOS changes for your expansion card(s).
7. Install the driver provided with the expansion card in your operating system.

Example: Installing and Removing a PCI Express Graphics Card:

- Installing a Graphics Card:
  Gently push down on the top edge of the card until it is fully inserted into the PCI Express slot. Make sure the card is securely seated in the slot and does not rock.

- Removing the Card:
  Gently push back on the lever on the slot and then lift the card straight out from the slot.

1-6 Back Panel Connectors



a PS/2 Keyboard and PS/2 Mouse Port

Use the upper port (green) to connect a PS/2 mouse and the lower port (purple) to connect a PS/2 keyboard.

b Parallel Port

Use the parallel port to connect devices such as a printer, scanner and etc. The parallel port is also called a printer port.

c Serial Port

Use the serial port to connect devices such as a mouse, modem or other peripherals.

d D-Sub Port

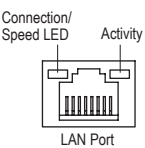
The D-Sub port supports a 15-pin D-Sub connector. Connect a monitor that supports D-Sub connection to this port.

e USB Port

The USB port supports the USB 2.0/1.1 specification. Use this port for USB devices such as a USB keyboard/mouse, USB printer, USB flash drive and etc.

f RJ-45 LAN Port

The Gigabit Ethernet LAN port provides Internet connection at up to 1 Gbps data rate. The following describes the states of the LAN port LEDs.



Connection/Speed LED:

State	Description
Orange	1 Gbps data rate
Green	100 Mbps data rate
Off	10 Mbps data rate

Activity LED:

State	Description
Blinking	Data transmission or receiving is occurring
Off	No data transmission or receiving is occurring

⓳ **Line In Jack (Blue)**

The default line in jack. Use this audio jack for line in devices such as an optical drive, walkman, etc.

⓴ **Line Out Jack (Front Speaker Out, Green)**

The default line out jack. Use this audio jack for a headphone or 2-channel speaker. This jack can be used to connect front speakers in a 4/5.1-channel audio configuration.

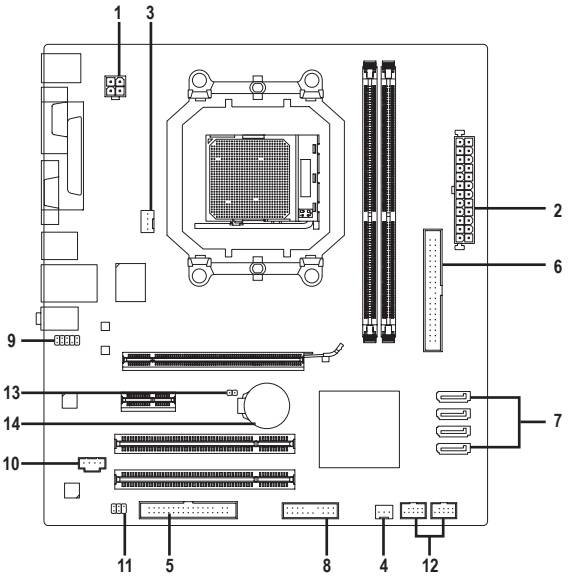
㉑ **Mic In Jack (Pink)**

The default Mic in jack. Microphones must be connected to this jack.

To configure 7.1-channel audio, you have to use an HD front panel audio module and enable the multi-channel audio feature through the audio driver. Refer to the instructions on setting up a 2/4/5.1/7.1-channel audio configuration in Chapter 5, "Configuring 2/4/5.1/7.1-Channel Audio."

- When removing the cable connected to a back panel connector, first remove the cable from your device and then remove it from the motherboard.
- When removing the cable, pull it straight out from the connector. Do not rock it side to side to prevent an electrical short inside the cable connector.

1-7 Internal Connectors



1)	ATX_12V	8)	F_PANEL
2)	ATX	9)	F_AUDIO
3)	CPU_FAN	10)	CD_IN
4)	SYS_FAN	11)	SPDIF_IO
5)	FDD	12)	F_USB1/F_USB2
6)	IDE	13)	CLR_CMOS
7)	SATA2_0/1/2/3	14)	BAT

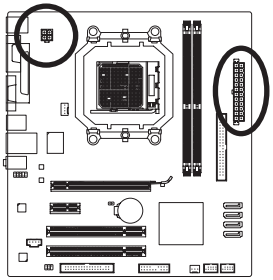
Read the following guidelines before connecting external devices:

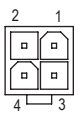
- First make sure your devices are compliant with the connectors you wish to connect.
- Before installing the devices, be sure to turn off the devices and your computer. Unplug the power cord from the power outlet to prevent damage to the devices.
- After installing the device and before turning on the computer, make sure the device cable has been securely attached to the connector on the motherboard.

1/2) ATX_12V/ATX (2x2 12V Power Connector and 2x12 Main Power Connector)

With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, first make sure the power supply is turned off and all devices are properly installed. The power connector possesses a foolproof design. Connect the power supply cable to the power connector in the correct orientation. The 12V power connector mainly supplies power to the CPU. If the 12V power connector is not connected, the computer will not start.

To meet expansion requirements, it is recommended that a power supply that can withstand high power consumption be used (500W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable or unbootable system.

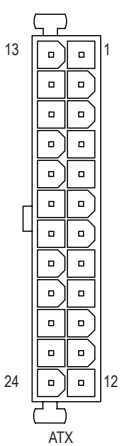




ATX_12V

ATX_12V:

Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V



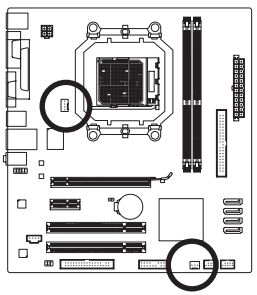
ATX

ATX:

Pin No.	Definition	Pin No.	Definition
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON (soft On/Off)
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power Good	20	-5V
9	5VSB (stand by +5V)	21	+5V
10	+12V	22	+5V
11	+12V (Only for 2x12-pin ATX)	23	+5V (Only for 2x12-pin ATX)
12	3.3V (Only for 2x12-pin ATX)	24	GND (Only for 2x12-pin ATX)

3/4) CPU_FAN/SYS_FAN (Fan Headers)

The motherboard has a 4-pin CPU fan header (CPU_FAN) and a 3-pin (SYS_FAN) system fan headers. Most fan headers possess a foolproof insertion design. When connecting a fan cable, be sure to connect it in the correct orientation (the black connector wire is the ground wire). The motherboard supports CPU fan speed control, which requires the use of a CPU fan with fan speed control design. For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis.



CPU_FAN:

Pin No.	Definition
1	GND
2	+12V / Speed Control
3	Sense
4	Speed Control

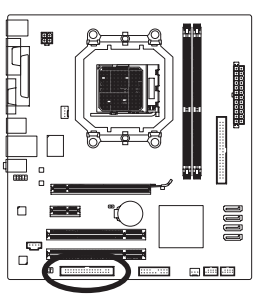
SYS_FAN:

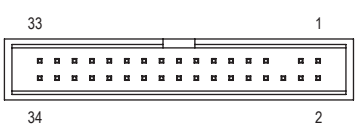
Pin No.	Definition
1	GND
2	+12V
3	Sense

- Be sure to connect fan cables to the fan headers to prevent your CPU and system from overheating. Overheating may result in damage to the CPU or the system may hang.
- These fan headers are not configuration jumper blocks. Do not place a jumper cap on the headers.

5) FDD (Floppy Disk Drive Connector)

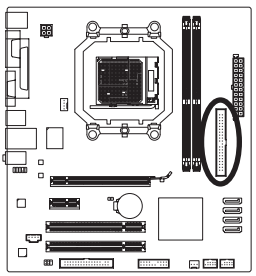
This connector is used to connect a floppy disk drive. The types of floppy disk drives supported are: 360 KB, 720 KB, 1.2 MB, 1.44 MB, and 2.88 MB. Before connecting a floppy disk drive, be sure to locate pin 1 of the connector and the floppy disk drive cable. The pin 1 of the cable is typically designated by a stripe of different color. For purchasing the optional floppy disk drive cable, please contact the local dealer.

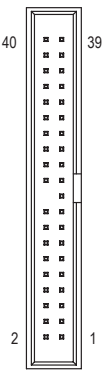




6) IDE (IDE Connector)

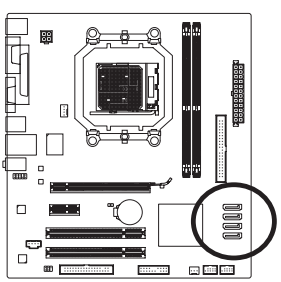
The IDE connector supports up to two IDE devices such as hard drives and optical drives. Before attaching the IDE cable, locate the foolproof groove on the connector. If you wish to connect two IDE devices, remember to set the jumpers and the cabling according to the role of the IDE devices (for example, master or slave). (For information about configuring master/slave settings for the IDE devices, read the instructions from the device manufacturers.)



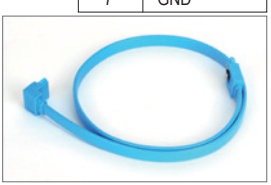


7) SATA2_0/1/2/3 (SATA 3Gb/s Connectors)

The SATA connectors conform to SATA 3Gb/s standard and are compatible with SATA 1.5Gb/s standard. Each SATA connector supports a single SATA device. The NVIDIA® GeForce 7025/nForce 630a controller supports RAID 0, RAID 1, RAID 10, RAID 5, and JBOD. Refer to Chapter 5, "Configuring SATA Hard Drive(s)," for instructions on configuring a RAID array.



Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

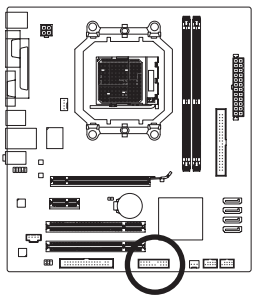


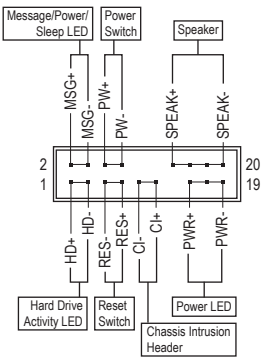
Please connect the L-shaped end of the SATA cable to your SATA hard drive.

- A RAID 0 or RAID 1 configuration requires at least two hard drives. If more than two hard drives are to be used, the total number of hard drives must be an even number.
- A RAID 5 configuration requires at least three hard drives. (The total number of hard drives does not have to be an even number.)
- A RAID 10 configuration requires at least four hard drives and the total number of hard drives must be an even number.

8) F_PANEL (Front Panel Header)

Connect the power switch, reset switch, speaker, chassis intrusion switch/sensor and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.





- **MSG/PWR** (Message/Power/Sleep LED, Yellow/Purple):

System Status	LED
S0	On
S1	Blinking
S3/S4/S5	Off

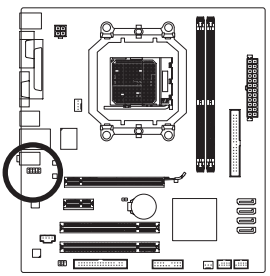
Connects to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED keeps blinking when the system is in S1 sleep state. The LED is off when the system is in S3/S4 sleep state or powered off (S5).

- **PW** (Power Switch, Red):
  Connects to the power switch on the chassis front panel. You may configure the way to turn off your system using the power switch (refer to Chapter 2, "BIOS Setup," "Power Management Setup," for more information).
- **SPEAK** (Speaker, Orange):
  Connects to the speaker on the chassis front panel. The system reports system startup status by issuing a beep code. One single short beep will be heard if no problem is detected at system startup. If a problem is detected, the BIOS may issue beeps in different patterns to indicate the problem. Refer to Chapter 5, "Troubleshooting," for information about beep codes.
- **HD** (Hard Drive Activity LED, Blue)
  Connects to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.
- **RES** (Reset Switch, Green):
  Connects to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.
- **CI** (Chassis Intrusion Header, Gray):
  Connects to the chassis intrusion switch/sensor on the chassis that can detect if the chassis cover has been removed. This function requires a chassis with a chassis intrusion switch/sensor.

The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

9) F_AUDIO (Front Panel Audio Header)

The front panel audio header supports Intel High Definition audio (HD) and AC'97 audio. You may connect your chassis front panel audio module to this header. Make sure the wire assignments of the module connector match the pin assignments of the motherboard header. Incorrect connection between the module connector and the motherboard header will make the device unable to work or even damage it.



For HD Front Panel Audio:

Pin No.	Definition
1	MIC2_L
2	GND
3	MIC2_R
4	-ACZ_DET
5	LINE2_R
6	GND
7	FAUDIO_JD
8	No Pin
9	LINE2_L
10	GND

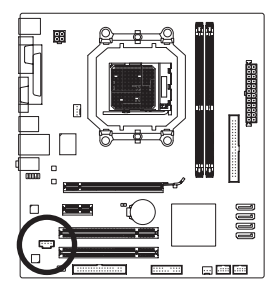
For AC'97 Front Panel Audio:

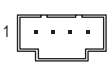
Pin No.	Definition
1	MIC
2	GND
3	MIC Power
4	NC
5	Line Out (R)
6	NC
7	NC
8	No Pin
9	Line Out (L)
10	NC

- The front panel audio header supports HD audio by default. If your chassis provides an AC'97 front panel audio module, refer to the instructions on how to activate AC'97 functionality via the audio software in Chapter 5, "Configuring 2/4/5.1/7.1-Channel Audio."
- Audio signals will be present on both of the front and back panel audio connections simultaneously. If you want to mute the back panel audio (only supported when using an HD front panel audio module), refer to Chapter 5, "Configuring 2/4/5.1/7.1-Channel Audio."
- Some chassis provide a front panel audio module that has separated connectors on each wire instead of a single plug. For information about connecting the front panel audio module that has different wire assignments, please contact the chassis manufacturer.

10) CD_IN (CD In Connector)

You may connect the audio cable that came with your optical drive to the header.

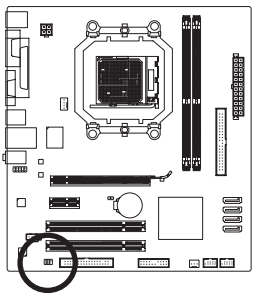




Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD-R

11) SPDIF_IO (S/PDIF In/Out Header)

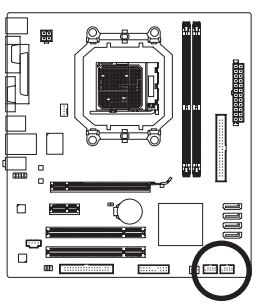
This header supports digital S/PDIF In/Out. Via an optional S/PDIF In and Out cable, this header can connect to an audio device that supports digital audio out and an audio system that supports digital audio in. For purchasing the optional S/PDIF In and Out cable, please contact the local dealer.

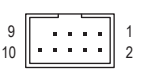


Pin No.	Definition
1	Power
2	No Pin
3	SPDIF
4	SPDIFI
5	GND
6	GND

12) F_USB1/F_USB2 (USB Headers)

The headers conform to USB 2.0/1.1 specification. Each USB header can provide two USB ports via an optional USB bracket. For purchasing the optional USB bracket, please contact the local dealer.



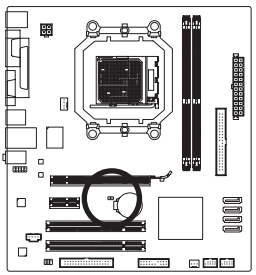


Pin No.	Definition
1	Power (5V)
2	Power (5V)
3	USB DX-
4	USB DY-
5	USB DX+
6	USB DY+
7	GND
8	GND
9	No Pin
10	NC

- Do not plug the IEEE 1394 bracket (2x5-pin) cable into the USB header.
- Prior to installing the USB bracket, be sure to turn off your computer and unplug the power cord from the power outlet to prevent damage to the USB bracket.

13) CLR_CMOS (Clearing CMOS Jumper)

Use this jumper to clear the CMOS values (e.g. date information and BIOS configurations) and reset the CMOS values to factory defaults. To clear the CMOS values, place a jumper cap on the two pins to temporarily short the two pins or use a metal object like a screwdriver to touch the two pins for a few seconds.



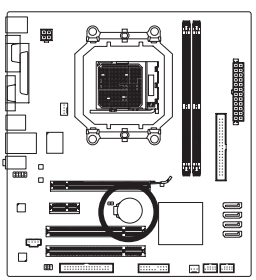
Open: Normal

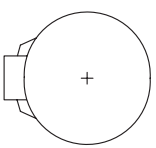
Short: Clear CMOS Values

- Always turn off your computer and unplug the power cord from the power outlet before clearing the CMOS values.
- After clearing the CMOS values and before turning on your computer, be sure to remove the jumper cap from the jumper. Failure to do so may cause damage to the motherboard.
- After system restart, go to BIOS Setup to load factory defaults (select **Load Optimized Defaults**) or manually configure the BIOS settings (refer to Chapter 2, "BIOS Setup," for BIOS configurations).

14) BAT (Battery)

The battery provides power to keep the values (such as BIOS configurations, date, and time information) in the CMOS when the computer is turned off. Replace the battery when the battery voltage drops to a low level, or the CMOS values may not be accurate or may be lost.





You may clear the CMOS values by removing the battery:

1. Turn off your computer and unplug the power cord.
2. Gently remove the battery from the battery holder and wait for one minute. (Or use a metal object like a screwdriver to touch the positive and negative terminals of the battery holder, making them short for 5 seconds.)
3. Replace the battery.
4. Plug in the power cord and restart your computer.

- Always turn off your computer and unplug the power cord before replacing the battery.
- Replace the battery with an equivalent one. Danger of explosion if the battery is replaced with an incorrect model.
- Contact the place of purchase or local dealer if you are not able to replace the battery by yourself or uncertain about the battery model.
- When installing the battery, note the orientation of the positive side (+) and the negative side (-) of the battery (the positive side should face up).
- Used batteries must be handled in accordance with local environmental regulations.

Chapter 2 BIOS Setup

BIOS (Basic Input and Output System) records hardware parameters of the system in the CMOS on the motherboard. Its major functions include conducting the Power-On Self-Test (POST) during system startup, saving system parameters and loading operating system, etc. BIOS includes a BIOS Setup program that allows the user to modify basic system configuration settings or to activate certain system features. When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS to keep the configuration values in the CMOS.

To access the BIOS Setup program, press the <Delete> key during the POST when the power is turned on. To see more advanced BIOS Setup menu options, you can press <Ctrl> + <F1> in the main menu of the BIOS Setup program.

To upgrade the BIOS, use either the GIGABYTE Q-Flash or @BIOS utility.

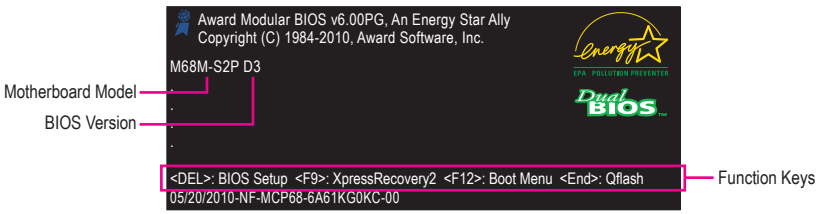
- Q-Flash allows the user to quickly and easily upgrade or back up BIOS without entering the operating system.
- @BIOS is a Windows-based utility that searches and downloads the latest version of BIOS from the Internet and updates the BIOS.

For instructions on using the Q-Flash and @BIOS utilities, refer to Chapter 4, "BIOS Update Utilities."

- Because BIOS flashing is potentially risky, if you do not encounter problems using the current version of BIOS, it is recommended that you not flash the BIOS. To flash the BIOS, do it with caution. Inadequate BIOS flashing may result in system malfunction.
- BIOS will emit a beep code during the POST. Refer to Chapter 5, "Troubleshooting," for the beep codes description.
- It is recommended that you not alter the default settings (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in system's failure to boot. If this occurs, try to clear the CMOS values and reset the board to default values. (Refer to the "Load Optimized Defaults" section in this chapter or introductions of the battery/ clearing CMOS jumper in Chapter 1 for how to clear the CMOS values.)

2-1 Startup Screen

The following screens may appear when the computer boots.


Award Modular BIOS v6.00PG, An Energy Star Ally
Copyright (C) 1984-2010, Award Software, Inc.
M68M-S2P D3
Motherboard Model
BIOS Version
<DEL>: BIOS Setup <F9>: XpressRecovery2 <F12>: Boot Menu <End>: Qflash
05/20/2010-NF-MCP68-6A61KG0KC-00
Function Keys

Function Keys:

<DEL>: BIOS SETUP

Press the <Delete> key to enter BIOS Setup or to access the Q-Flash utility in BIOS Setup.

<F9>: XPRESS RECOVERY2

If you have ever entered Xpress Recovery2 to back up hard drive data using the driver disk, the <F9> key can be used for subsequent access to Xpress Recovery2 during the POST. For more information, refer to Chapter 4, "Xpress Recovery2."

<F12>: BOOT MENU

Boot Menu allows you to set the first boot device without entering BIOS Setup. In Boot Menu, use the up arrow key <↑> or the down arrow key <↓> to select the first boot device, then press <Enter> to accept. To exit Boot Menu, press <Esc>. The system will directly boot from the device configured in Boot Menu.
Note: The setting in Boot Menu is effective for one time only. After system restart, the device boot order will still be based on BIOS Setup settings. You can access Boot Menu again to change the first boot device setting as needed.

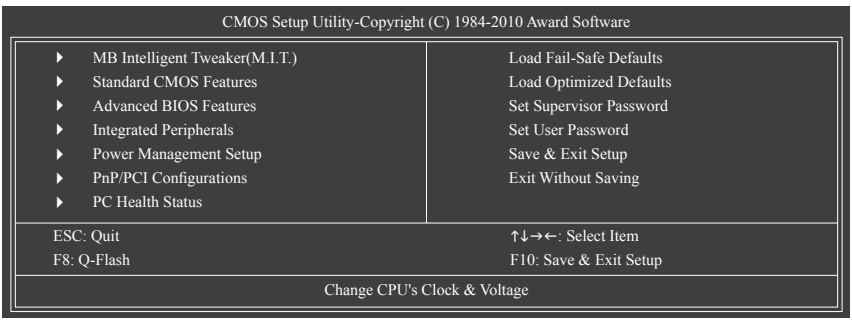
<END>: Q-FLASH

Press the <End> key to access the Q-Flash utility directly without having to enter BIOS Setup first.

2-2 The Main Menu

Once you enter the BIOS Setup program, the Main Menu (as shown below) appears on the screen. Use arrow keys to move among the items and press <Enter> to accept or enter a sub-menu.

(Sample BIOS Version: D3)



BIOS Setup Program Function Keys

<↑><↓><←><→>	Move the selection bar to select an item
<Enter>	Execute command or enter the submenu
<Esc>	Main Menu: Exit the BIOS Setup program Submenus: Exit current submenu
<Page Up>	Increase the numeric value or make changes
<Page Down>	Decrease the numeric value or make changes
<F1>	Show descriptions of the function keys
<F2>	Move cursor to the Item Help block on the right (submenus only)
<F5>	Restore the previous BIOS settings for the current submenus
<F6>	Load the Fail-Safe BIOS default settings for the current submenus
<F7>	Load the Optimized BIOS default settings for the current submenus
<F8>	Access the Q-Flash utility
<F9>	Display system information
<F10>	Save all the changes and exit the BIOS Setup program

Main Menu Help

The on-screen description of a highlighted setup option is displayed on the bottom line of the Main Menu.

Submenu Help

While in a submenu, press <F1> to display a help screen (General Help) of function keys available for the menu. Press <Esc> to exit the help screen. Help for each item is in the Item Help block on the right side of the submenu.

- If you do not find the settings you want in the Main Menu or a submenu, press <Ctrl>+<F1> to access more advanced options.
- When the system is not stable as usual, select the **Load Optimized Defaults** item to set your system to its defaults.
- The BIOS Setup menus described in this chapter are for reference only and may differ by BIOS version.

- **MB Intelligent Tweaker(M.I.T.)**

  Use this menu to configure the clock, frequency and voltages of your CPU, memory, etc.

- **Standard CMOS Features**

  Use this menu to configure the system time and date, hard drive types, floppy disk drive types, and the type of errors that stop the system boot, etc.

- **Advanced BIOS Features**

  Use this menu to configure the device boot order, advanced features available on the CPU, and the primary display adapter.

- **Integrated Peripherals**

  Use this menu to configure all peripheral devices, such as IDE, SATA, USB, integrated audio, and integrated LAN, etc.

- **Power Management Setup**

  Use this menu to configure all the power-saving functions.

- **PnP/PCI Configurations**

  Use this menu to configure the system's PCI & PnP resources.

- **PC Health Status**

  Use this menu to see information about autodetected system/CPU temperature, system voltage and fan speed, etc.

- **Load Fail-Safe Defaults**

  Fail-Safe defaults are factory settings for the most stable, minimal-performance system operations.

- **Load Optimized Defaults**

  Optimized defaults are factory settings for optimal-performance system operations.

- **Set Supervisor Password**

  Change, set, or disable password. It allows you to restrict access to the system and BIOS Setup.
  A supervisor password allows you to make changes in BIOS Setup.

- **Set User Password**

  Change, set, or disable password. It allows you to restrict access to the system and BIOS Setup.
  A user password only allows you to view the BIOS settings but not to make changes.

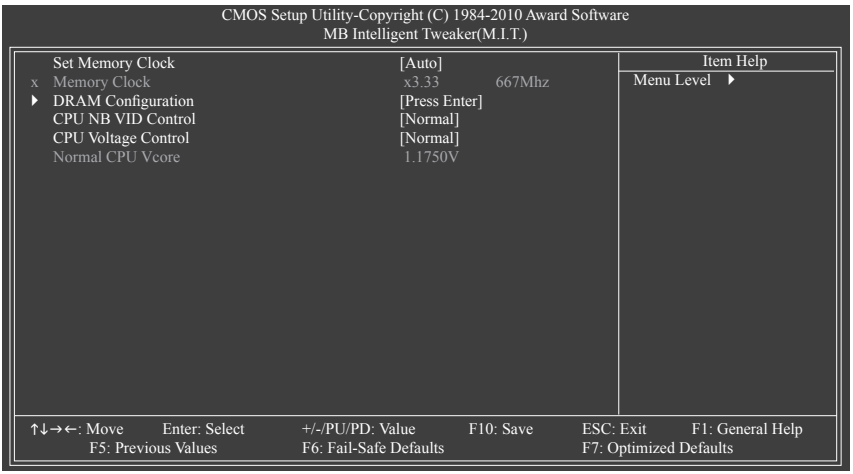
- **Save & Exit Setup**

  Save all the changes made in the BIOS Setup program to the CMOS and exit BIOS Setup. (Pressing <F10> can also carry out this task.)

- **Exit Without Saving**

  Abandon all changes and the previous settings remain in effect. Pressing <Y> to the confirmation message will exit BIOS Setup. (Pressing <Esc> can also carry out this task.)

2-3 MB Intelligent Tweaker(M.I.T.)


CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
MB Intelligent Tweaker(M.I.T.)
Set Memory Clock [Auto]
x Memory Clock x3.33 667Mhz
DRAM Configuration [Press Enter]
CPU NB VID Control [Normal]
CPU Voltage Control [Normal]
Normal CPU Vcore 1.1750V
Item Help
Menu Level
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Whether the system will work stably with the overclock settings you made is dependent on your overall system configurations. Incorrectly doing overclock may result in damage to CPU, chipset, or memory and reduce the useful life of these components. This page is for advanced users only and we recommend you not to alter the default settings to prevent system instability or other unexpected results. (Inadequately altering the settings may result in system's failure to boot. If this occurs, clear the CMOS values and reset the board to default values.)

☞ Set Memory Clock

Determines whether to manually set the memory clock. **Auto** lets BIOS automatically set the memory clock as required. **Manual** allows the memory clock control item below to be configurable. (Default: Auto)

☞ Memory Clock

This option is configurable only when **Set Memory Clock** is set to **Manual**.

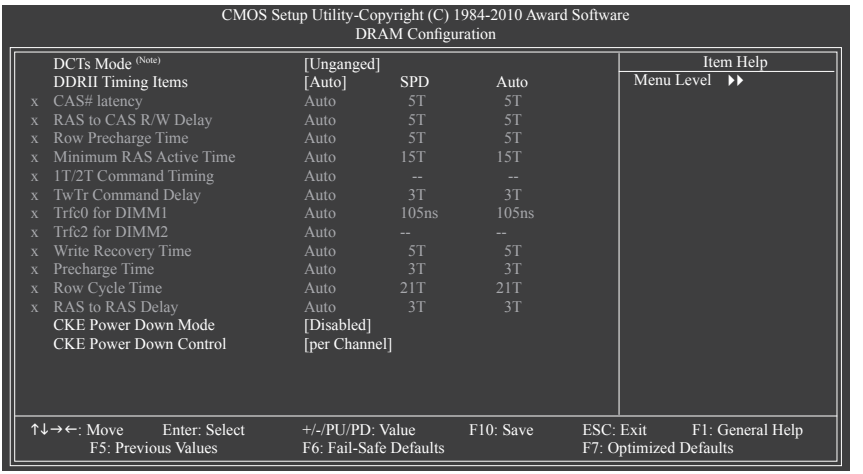
When you use an AM3/AM2+ CPU:

- X2.00 Sets Memory Clock to X2.00.
- X2.66 Sets Memory Clock to X2.66.
- X3.33 Sets Memory Clock to X3.33.
- X4.00 Sets Memory Clock to X4.00.
- X5.33 Sets Memory Clock to X5.33.

When you use an AM2 CPU:

- DDR 400 Sets Memory Clock to DDR 400.
- DDR 533 Sets Memory Clock to DDR 533.
- DDR 667 Sets Memory Clock to DDR 667.
- DDR 800 Sets Memory Clock to DDR 800.

☞ DRAM Configuration


CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
DRAM Configuration
DCTs Mode (Note) [Unganged]
DDRII Timing Items [Auto] SPD Auto
x CAS# latency Auto 5T 5T
x RAS to CAS R/W Delay Auto 5T 5T
x Row Precharge Time Auto 5T 5T
x Minimum RAS Active Time Auto 15T 15T
x 1T/2T Command Timing Auto -- --
x TwTr Command Delay Auto 3T 3T
x Trfc0 for DIMM1 Auto 105ns 105ns
x Trfc2 for DIMM2 Auto -- --
x Write Recovery Time Auto 5T 5T
x Precharge Time Auto 3T 3T
x Row Cycle Time Auto 21T 21T
x RAS to RAS Delay Auto 3T 3T
CKE Power Down Mode [Disabled]
CKE Power Down Control [per Channel]
Item Help
Menu Level ▸▸
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☞ DCTs Mode (Note)

Allows you to set memory control mode.

▸▸ Ganged Sets memory control mode to single dual-channel.

▸▸ Unganged Sets memory control mode to two single-channel. (Default)

☞ DDRII Timing Items

Manual allows all DDR2 Timing items below to be configurable.

Options are: Auto (default), Manual.

☞ CAS# latency

Options are: Auto (default), 3T~7T.

☞ RAS to CAS R/W Delay

Options are: Auto (default), 3T~6T.

☞ Row Precharge Time

Options are: Auto (default), 3T~6T.

☞ Minimum RAS Active Time

Options are: Auto (default), 5T~18T.

☞ 1T/2T Command Timing

Options are: Auto (default), 1T, 2T.

☞ TwTr Command Delay

Options are: Auto (default), 1T~3T.

☞ Trfc0 for DIMM1

Options are: Auto (default), 75ns, 105ns, 127.5ns, 195ns, 327.5ns.

☞ Trfc2 for DIMM2

Options are: Auto (default), 75ns, 105ns, 127.5ns, 195ns, 327.5ns.

☞ Write Recovery Time

Options are: Auto (default), 3T~6T.

(Note) This item appears only if you install a CPU that supports this feature.

☞ **Precharge Time**

Options are: Auto (default), 2T, 3T.

☞ **Row Cycle Time**

Options are: Auto (default), 11T~26T.

☞ **RAS to RAS Delay**

Options are: Auto (default), 2T~5T.

☞ **CKE Power Down Mode**

Determines whether to set the memory to power down mode when the CKE pin is closed. (Default: Disabled)

☞ **CKE Power Down Control**

Allows you to select a CKE power down mode. Options are per Channel (Default), per CS.

☞ **CPU NB VID Control**

Allows you to set the CPU Northbridge VID voltage. **Auto** sets the CPU Northbridge VID voltage as required. The adjustable range is dependent on the CPU being installed. (Default: Normal)

Note: Increasing CPU voltage may result in damage to your CPU or reduce the useful life of the CPU.

☞ **CPU Voltage Control**

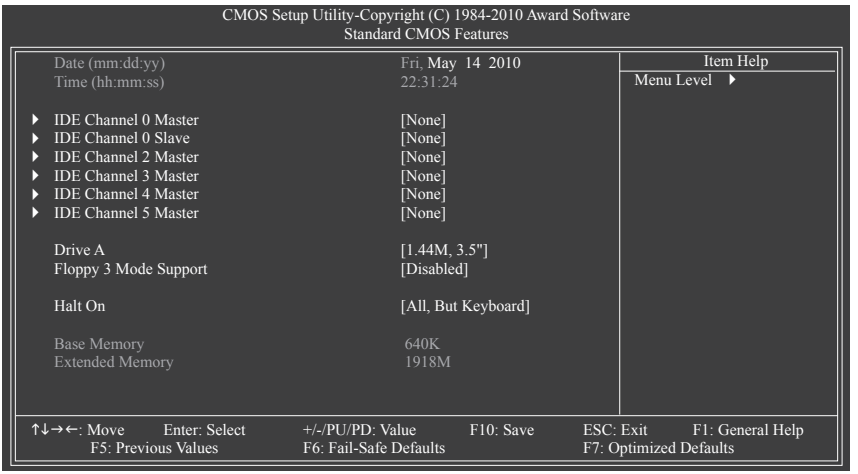
Allows you to set the CPU voltage. **Auto** sets the CPU voltage as required. The adjustable range is dependent on the CPU being installed. (Default: Normal)

Note: Increasing CPU voltage may result in damage to your CPU or reduce the useful life of the CPU.

☞ **Normal CPU Vcore**

Displays the normal operating voltage of your CPU.

2-4 Standard CMOS Features


CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
Standard CMOS Features
Date (mm:dd:yy) Fri, May 14 2010
Time (hh:mm:ss) 22:31:24
IDE Channel 0 Master [None]
IDE Channel 0 Slave [None]
IDE Channel 2 Master [None]
IDE Channel 3 Master [None]
IDE Channel 4 Master [None]
IDE Channel 5 Master [None]
Drive A [1.44M, 3.5"]
Floppy 3 Mode Support [Disabled]
Halt On [All, But Keyboard]
Base Memory 640K
Extended Memory 1918M
Item Help
Menu Level
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Date (mm:dd:yy)

Sets the system date. The date format is week (read-only), month, date and year. Select the desired field and use the up arrow or down arrow key to set the date.

Time (hh:mm:ss)

Sets the system time. For example, 1 p.m. is 13:0:0. Select the desired field and use the up arrow or down arrow key to set the time.

IDE Channel 0 Master/Slave

▸▸ IDE HDD Auto-Detection

Press <Enter> to autodetect the parameters of the IDE/SATA device on this channel.

▸▸ IDE Channel 0 Master/Slave

Configure your IDE/SATA devices by using one of the two methods below:

- Auto — Lets the BIOS automatically detect IDE/SATA devices during the POST. (Default)
- None — If no IDE/SATA devices are used, set this item to **None** so the system will skip the detection of the device during the POST for faster system startup.

▸▸ Access Mode — Sets the hard drive access mode. Options are: Auto (default), CHS, LBA, Large.

IDE Channel 2, 3, 4, 5 Master

▸▸ IDE Auto-Detection

Press <Enter> to autodetect the parameters of the IDE/SATA device on this channel.

▸▸ Extended IDE Drive

Configure your IDE/SATA devices by using one of the two methods below:

- Auto — Lets the BIOS automatically detect IDE/SATA devices during the POST. (Default)
- None — If no IDE/SATA devices are used, set this item to **None** so the system will skip the detection of the device during the POST for faster system startup.

▸▸ Access Mode — Sets the hard drive access mode. Options are: Auto (default), Large.

The following fields display your hard drive specifications. If you wish to enter the parameters manually, refer to the information on the hard drive.

- Capacity — Approximate capacity of the currently installed hard drive.
- Cylinder — Number of cylinders.
- Head — Number of heads.
- Precomp — Write precompensation cylinder.
- Landing Zone — Landing zone.
- Sector — Number of sectors.

Drive A

Allows you to select the type of floppy disk drive installed in your system. If you do not install a floppy disk drive, set this item to **None**. Options are: None, 360K/5.25", 1.2M/5.25", 720K/3.5", 1.44M/3.5", 2.88M/3.5".

Floppy 3 Mode Support

Allows you to specify whether the installed floppy disk drive is 3-mode floppy disk drive, a Japanese standard floppy disk drive. Options are: Disabled (default), Drive A.

Halt On

Allows you to determine whether the system will stop for an error during the POST.

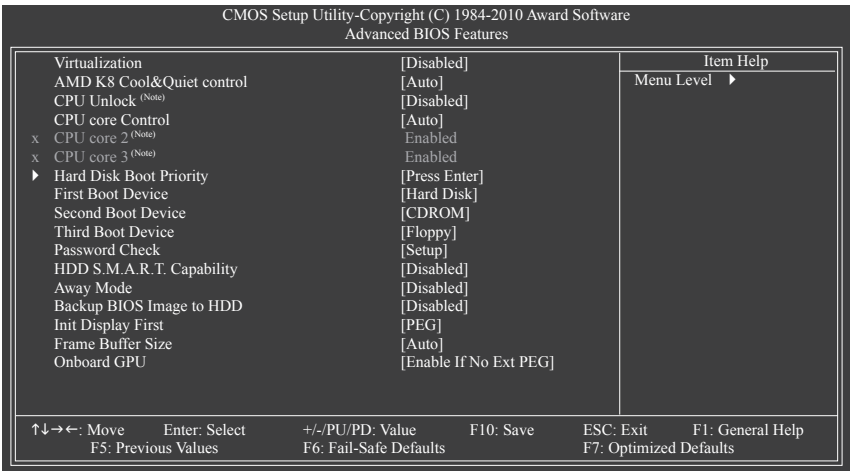
- All Errors — Whenever the BIOS detects a non-fatal error the system boot will stop.
- No Errors — The system boot will not stop for any error.
- All, But Keyboard — The system boot will not stop for a keyboard error but stop for all other errors. (Default)
- All, But Diskette — The system boot will not stop for a floppy disk drive error but stop for all other errors.
- All, But Disk/Key — The system boot will not stop for a keyboard or a floppy disk drive error but it will stop for all other errors.

Memory

These fields are read-only and are determined by the BIOS POST.

- Base Memory — Also called conventional memory. Typically, 640 KB will be reserved for the MS-DOS operating system.
- Extended Memory — The amount of extended memory.

2-5 Advanced BIOS Features


CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
Advanced BIOS Features
Item Help
Menu Level
Virtualization [Disabled]
AMD K8 Cool&Quiet control [Auto]
CPU Unlock (Note) [Disabled]
CPU core Control [Auto]
x CPU core 2 (Note) Enabled
x CPU core 3 (Note) Enabled
Hard Disk Boot Priority [Press Enter]
First Boot Device [Hard Disk]
Second Boot Device [CDROM]
Third Boot Device [Floppy]
Password Check [Setup]
HDD S.M.A.R.T. Capability [Disabled]
Away Mode [Disabled]
Backup BIOS Image to HDD [Disabled]
Init Display First [PEG]
Frame Buffer Size [Auto]
Onboard GPU [Enable If No Ext PEG]
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☞ **Virtualization**

Virtualization allows a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems.

(Default: Disabled)

☞ **AMD K8 Cool&Quiet control**

- ⏩ Auto — Lets the AMD Cool'n'Quiet driver dynamically adjust the CPU clock and VID to reduce heat output from your computer and its power consumption. (Default)
- ⏩ Disabled — Disables this function.

☞ **CPU Unlock (Note)**

Allows you to determine whether unlock hidden CPU cores. (Default: Disabled)

☞ **CPU core Control**

Allows you to determine whether to manually enable/disable CPU Core 2 and Core 3. **Manual** allows the two items below to be configurable.

- ⏩ Auto — Lets the BIOS to enable all CPU cores (number of cores available depends on the CPU being used). (Default)
- ⏩ Manual — Allows you to individually enable/disable CPU Core 2 and Core 3.

☞ **CPU core 2 (Note)**

Enables or disables CPU Core 2. (Default: Enabled)

☞ **CPU core 3 (Note)**

Enables or disables CPU Core 3. (Default: Enabled)

☞ **Hard Disk Boot Priority**

Specifies the sequence of loading the operating system from the installed hard drives. Use the up or down arrow key to select a hard drive, then press the plus key <+> (or <PageUp>) or the minus key <-> (or <PageDown>) to move it up or down on the list. Press <Esc> to exit this menu when finished.

(Note) This item is present only if you install a CPU that supports this feature.

First/Second/Third Boot Device

Specifies the boot order from the available devices. Use the up or down arrow key to select a device and press <Enter> to accept. Options are: Floppy, LS120, Hard Disk, CDROM, ZIP, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, Legacy LAN, Disabled.

Password Check

Specifies whether a password is required every time the system boots, or only when you enter BIOS Setup. After configuring this item, set the password(s) under the **Set Supervisor/User Password** item in the BIOS Main Menu.

- Setup — A password is only required for entering the BIOS Setup program. (Default)
- System — A password is required for booting the system and for entering the BIOS Setup program.

HDD S.M.A.R.T. Capability

Enables or disables the S.M.A.R.T. (Self Monitoring and Reporting Technology) capability of your hard drive. This feature allows your system to report read/write errors of the hard drive and to issue warnings when a third party hardware monitor utility is installed. (Default: Enabled)

Away Mode

Enables or disables Away Mode in Windows XP Media Center operating system. Away Mode allows the system to silently perform unattended tasks while in a low-power mode that appears off.
(Default: Disabled)

Backup BIOS Image to HDD

Allows the system to copy the BIOS image file to the hard drive. If the system BIOS is corrupted, it will be recovered from this image file. (Default: Disabled)

Init Display First

Specifies the first initiation of the monitor display from the installed PCI graphics card, PCI Express graphics card, or the onboard graphics.

- PCI Slot — Sets the PCI graphics card as the first display.
- Onboard VGA — Sets the onboard graphics as the first display.
- PEG — Sets the PCI Express graphics card as the first display. (Default)

Frame Buffer Size

Frame buffer size is the total amount of system memory allocated solely for the onboard graphics controller. MS-DOS, for example, will use only this memory for display. Options are: Auto (Default), 32MB, 64MB, 128MB, 256MB, Disabled.

Onboard GPU

Enables or disables the onboard graphics function.

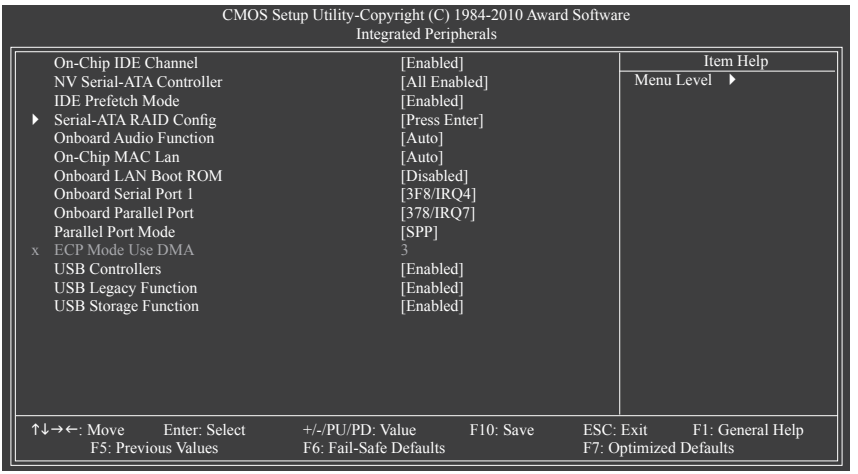
- Enable If No Ext PEG

Activates the onboard graphics only if no PCI Express graphics card is installed. (Default)

- Always Enable

Always activates the onboard graphics, whether or not a PCI Express card is installed. If you wish to set up a dual view configuration, set this item to Always Enable.

2-6 Integrated Peripherals


CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
Integrated Peripherals
On-Chip IDE Channel [Enabled]
NV Serial-ATA Controller [All Enabled]
IDE Prefetch Mode [Enabled]
Serial-ATA RAID Config [Press Enter]
Onboard Audio Function [Auto]
On-Chip MAC Lan [Auto]
Onboard LAN Boot ROM [Disabled]
Onboard Serial Port 1 [3F8/IRQ4]
Onboard Parallel Port [378/IRQ7]
Parallel Port Mode [SPP]
x ECP Mode Use DMA 3
USB Controllers [Enabled]
USB Legacy Function [Enabled]
USB Storage Function [Enabled]
Item Help
Menu Level
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☞ **On-Chip IDE Channel**

Enables or disables the integrated IDE controller. (Default: Enabled)

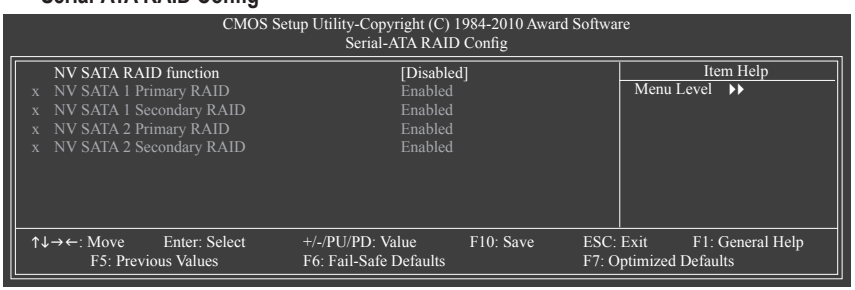
☞ **NV Serial-ATA Controller**

Enables or disables the integrated SATA controller(s). You can select whether to enable all SATA controllers or only the first SATA controller. (Default: All Enabled)

☞ **IDE Prefetch Mode**

Enables or disables prefetch mode for the integrated IDE controller. Enabled activates the IDE prefetch buffer to enhance hard drive performance. (Default: Enabled)

☞ **Serial-ATA RAID Config**


CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
Serial-ATA RAID Config
NV SATA RAID function [Disabled]
x NV SATA 1 Primary RAID Enabled
x NV SATA 1 Secondary RAID Enabled
x NV SATA 2 Primary RAID Enabled
x NV SATA 2 Secondary RAID Enabled
Item Help
Menu Level
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☞ **NV SATA RAID function**

Enables or disables RAID for the integrated SATA 3Gb/s controllers. Enabled allows you to configure RAID for individual SATA channel. (Default: Disabled)

☞ **NV SATA 1 Primary RAID**

Enables or disables RAID for the first channel of the first integrated SATA 3Gb/s controller. This item is configurable only if the NV SATA RAID function item is set to Enabled. (Default: Enabled)

☞ NV SATA 1 Secondary RAID

Enables or disables RAID for the second channel of the first integrated SATA 3Gb/s controller. This item is configurable only if the **NV SATA RAID function** item is set to Enabled. (Default: Enabled)

☞ NV SATA 2 Primary RAID

Enables or disables RAID for the first channel of the second integrated SATA 3Gb/s controller. This item is configurable only if the **NV SATA RAID function** item is set to Enabled. (Default: Enabled)

☞ NV SATA 2 Secondary RAID

Enables or disables RAID for the first channel of the second integrated SATA 3Gb/s controller. This item is configurable only if the **NV SATA RAID function** item is set to Enabled. (Default: Enabled)

☞ Onboard Audio Function

Enables or disables the onboard audio function. (Default: Auto)

If you wish to install a 3rd party add-in audio card instead of using the onboard audio, set this item to **Disabled**.

☞ On-Chip MAC Lan

Enables or disables the onboard LAN function. (Default: Auto)

If you wish to install a 3rd party add-in network card instead of using the onboard LAN, set this item to **Disabled**.

☞ Onboard LAN Boot ROM

Allows you to decide whether to activate the boot ROM integrated with the onboard LAN chip. (Default: Disabled)

☞ Onboard Serial Port 1

Enables or disables the first serial port and specifies its base I/O address and corresponding interrupt. Options are: Auto, 2F8/IRQ3, 3F8/IRQ4(default), 3E8/IRQ4, 2E8/IRQ3, Disabled.

☞ Onboard Parallel Port

Enables or disables the onboard parallel port (LPT) and specifies its base I/O address and corresponding interrupt. Options are: 378/IRQ7 (default), 278/IRQ5, 3BC/IRQ7, Disabled.

☞ Parallel Port Mode

Selects an operating mode for the onboard parallel (LPT) port. Options are: SPP (Standard Parallel Port) (default), EPP (Enhanced Parallel Port), ECP (Extended Capabilities Port), ECP+EPP.

☞ ECP Mode Use DMA

Selects DMA channel for the LPT port in ECP mode. This item is configurable only if **Parallel Port Mode** is set to **ECP** or **ECP+EPP** mode. Options are: 3 (default), 1.

☞ USB Controllers

Enables or disables the integrated USB controllers. (Default: Enabled)

Disabled will turn off all of the USB functionalities below.

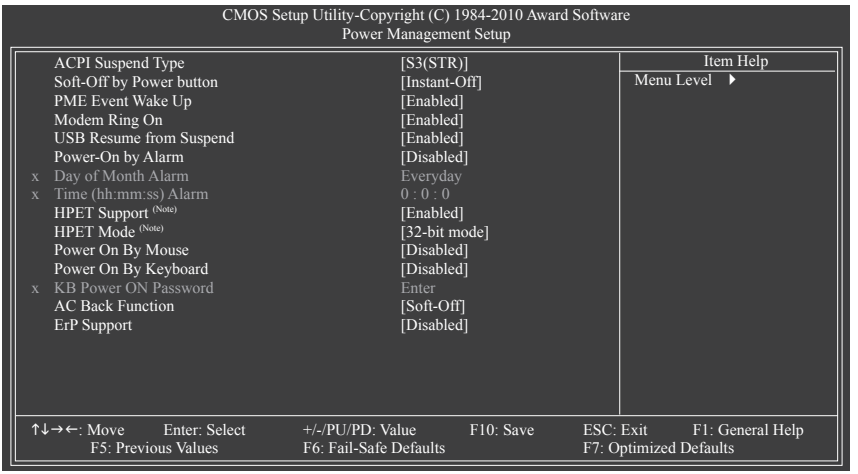
☞ USB Legacy Function

Allows USB keyboard to be used in MS-DOS. (Default: Enabled)

☞ USB Storage Function

Determines whether to detect USB storage devices, including USB flash drives and USB hard drives during the POST. (Default: Enabled)

2-7 Power Management Setup


CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
Power Management Setup
ACPI Suspend Type [S3(STR)]
Soft-Off by Power button [Instant-Off]
PME Event Wake Up [Enabled]
Modem Ring On [Enabled]
USB Resume from Suspend [Enabled]
Power-On by Alarm [Disabled]
x Day of Month Alarm Everyday
x Time (hh:mm:ss) Alarm 0 : 0 : 0
HPET Support (Note) [Enabled]
HPET Mode (Note) [32-bit mode]
Power On By Mouse [Disabled]
Power On By Keyboard [Disabled]
x KB Power ON Password Enter
AC Back Function [Soft-Off]
ErP Support [Disabled]
Item Help
Menu Level
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☞ ACPI Suspend Type

Specifies the ACPI sleep state when the system enters suspend.

- ⏩ S1(POS) Enables the system to enter the ACPI S1 (Power on Suspend) sleep state. In S1 sleep state, the system appears suspended and stays in a low power mode. The system can be resumed at any time.
- ⏩ S3(STR) Enables the system to enter the ACPI S3 (Suspend to RAM) sleep state (default). In S3 sleep state, the system appears to be off and consumes less power than in the S1 state. When signaled by a wake-up device or event, the system resumes to its working state exactly where it was left off.

☞ Soft-Off by Power button

Configures the way to turn off the computer in MS-DOS mode using the power button.

- ⏩ Instant-Off Press the power button and then the system will be turned off instantly. (Default)
- ⏩ Delay 4 Sec. Press and hold the power button for 4 seconds to turn off the system. If the power button is pressed for less than 4 seconds, the system will enter suspend mode.

☞ PME Event Wake Up

Allows the system to be awakened from an ACPI sleep state by a wake-up signal from a PCI or PCIe device. Note: To use this function, you need an ATX power supply providing at least 1A on the +5VSB lead. (Default: Enabled)

☞ Modem Ring On

Allows the system to be awakened from an ACPI sleep state by a wake-up signal from a modem that supports wake-up function. (Default: Enabled)

☞ USB Resume from Suspend

Allows the system to be awakened from ACPI S3 sleep state by a wake-up signal from the installed USB device. (Default: Enabled)

(Note) Supported on Windows 7/Vista operating system only.

☞ Power-On by Alarm

Determines whether to power on the system at a desired time. (Default: Disabled)

If enabled, set the date and time as following:

⏩ Day of Month Alarm: Turn on the system at a specific time on each day or on a specific day in a month.

⏩ Time (hh: mm: ss) Alarm: Set the time at which the system will be powered on automatically.

Note: When using this function, avoid inadequate shutdown from the operating system or removal of the AC power, or the settings may not be effective.

☞ HPET Support (Note)

Enables or disables High Precision Event Timer (HPET) for Windows 7/Vista operating system. (Default: Enabled)

☞ HPET Mode (Note)

Allows you to select the HPET mode for your Windows 7/Vista operating system. Select **32-bit mode** when you install 32-bit Windows 7/Vista; select **64-bit mode** when you install 64-bit Windows 7/Vista. This item is configurable only if the **HPET Support** is set to **Enabled**. (Default: 32-bit mode)

☞ Power On By Mouse

Allows the system to be turned on by a PS/2 mouse wake-up event.

Note: To use this function, you need an ATX power supply providing at least 1A on the +5VSB lead.

⏩ Disabled Disables this function. (Default)

⏩ Double Click Double click on left button on the PS/2 mouse to turn on the system.

☞ Power On By Keyboard

Allows the system to be turned on by a PS/2 keyboard wake-up event.

Note: you need an ATX power supply providing at least 1A on the +5VSB lead.

⏩ Disabled Disables this function. (Default)

⏩ Password Set a password with 1~5 characters to turn on the system.

⏩ Any KEY Press any key on the keyboard to turn on the system.

⏩ Keyboard 98 Press POWER button on the Windows 98 keyboard to turn on the system.

☞ KB Power ON Password

Set the password when **Power On by Keyboard** is set to **Password**. Press <Enter> on this item and set a password with up to 5 characters and then press <Enter> to accept. To turn on the system, enter the password and press <Enter>.

Note: To cancel the password, press <Enter> on this item. When prompted for the password, press <Enter> again without entering the password to clear the password settings.

☞ AC Back Function

Determines the state of the system after the return of power from an AC power loss.

⏩ Soft-Off The system stays off upon the return of the AC power. (Default)

⏩ Full-On The system is turned on upon the return of the AC power.

☞ ErP Support

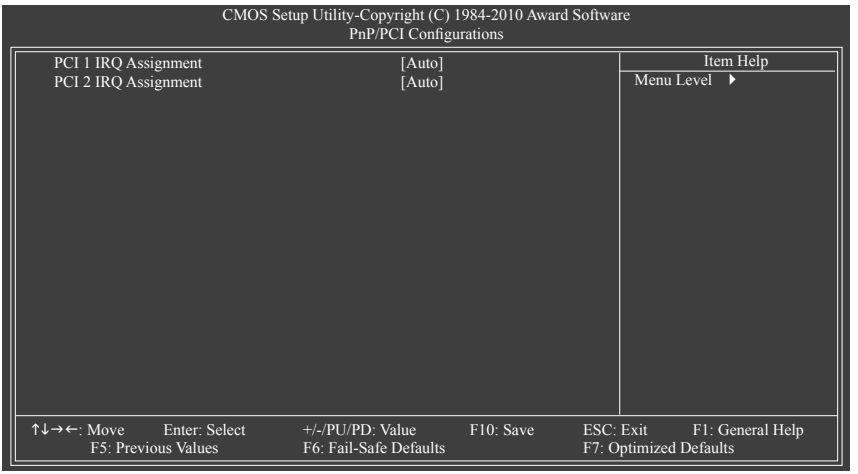
Determines whether to let the system consume less than 1W power in S5 (shutdown) state. (Default: Disabled)

Note: When this item is set to Enabled, the following four functions will become unavailable:

PME event wake up, power on by mouse, power on by keyboard, and wake on LAN.

(Note) Supported on Windows 7/Vista operating system only.

2-8 PnP/PCI Configurations


CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
PnP/PCI Configurations
PCI 1 IRQ Assignment [Auto]
PCI 2 IRQ Assignment [Auto]
Item Help
Menu Level
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

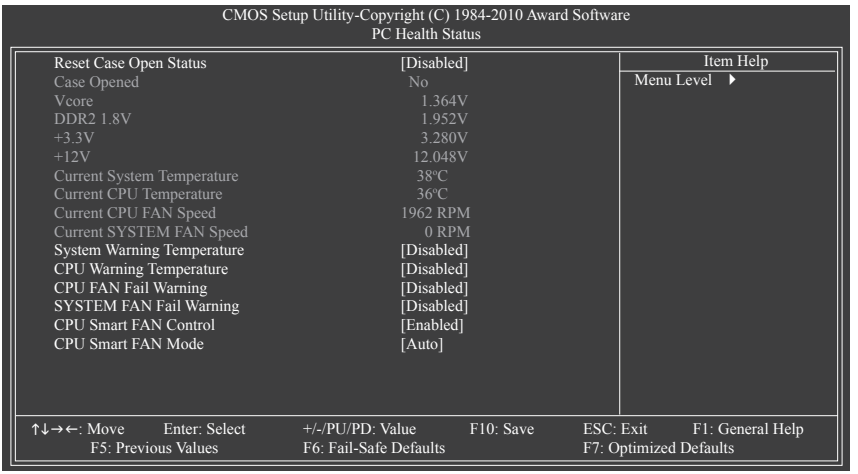
☞ **PCI 1 IRQ Assignment**

- ⏩ Auto — BIOS auto-assigns IRQ to the first PCI slot. (Default)
- ⏩ 3,4,5,7,9,10,11,12,14,15 — Assigns IRQ 3,4,5,7,9,10,11,12,14,15 to the first PCI slot.

☞ **PCI 2 IRQ Assignment**

- ⏩ Auto — BIOS auto-assigns IRQ to the second PCI slot. (Default)
- ⏩ 3,4,5,7,9,10,11,12,14,15 — Assigns IRQ 3,4,5,7,9,10,11,12,14,15 to the second PCI slot.

2-9 PC Health Status


CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
PC Health Status
Reset Case Open Status [Disabled]
Case Opened No
Vcore 1.364V
DDR2 1.8V 1.952V
+3.3V 3.280V
+12V 12.048V
Current System Temperature 38°C
Current CPU Temperature 36°C
Current CPU FAN Speed 1962 RPM
Current SYSTEM FAN Speed 0 RPM
System Warning Temperature [Disabled]
CPU Warning Temperature [Disabled]
CPU FAN Fail Warning [Disabled]
SYSTEM FAN Fail Warning [Disabled]
CPU Smart FAN Control [Enabled]
CPU Smart FAN Mode [Auto]
Item Help
Menu Level
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☞ **Reset Case Open Status**

Keeps or clears the record of previous chassis intrusion status. **Enabled** clears the record of previous chassis intrusion status and the **Case Opened** field will show "No" at next boot. (Default: Disabled)

☞ **Case Opened**

Displays the detection status of the chassis intrusion detection device attached to the motherboard CI header. If the system chassis cover is removed, this field will show "Yes", otherwise it will show "No". To clear the chassis intrusion status record, set **Reset Case Open Status** to **Enabled**, save the settings to the CMOS, and then restart your system.

☞ **Current Voltage(V) Vcore/DDR2 1.8V/+3.3V/+12V**

Displays the current system voltages.

☞ **Current System/CPU Temperature**

Displays current system/CPU temperature.

☞ **Current CPU/SYSTEM FAN Speed (RPM)**

Displays current CPU/system fan speed.

☞ **System/CPU Warning Temperature**

Sets the warning threshold for system/CPU temperature. When system/CPU temperature exceeds the threshold, BIOS will emit warning sound. Options are: Disabled (default), 60°C/140°F, 70°C/158°F, 80°C/176°F, 90°C/194°F.

☞ **CPU/SYSTEM FAN Fail Warning**

Allows the system to emit warning sound if the CPU/system fan is not connected or fails. Check the fan condition or fan connection when this occurs. (Default: Disabled)

☞ **CPU Smart FAN Control**

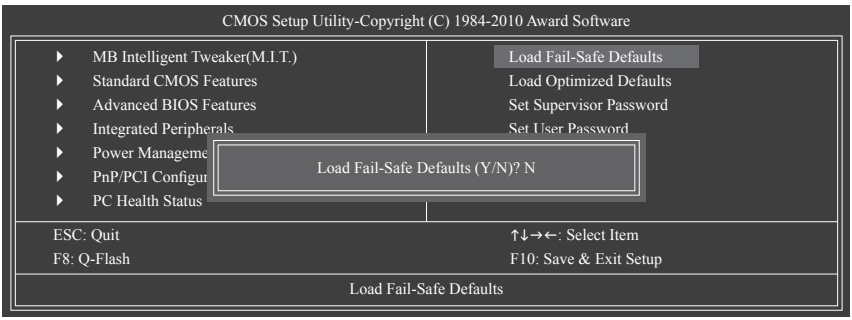
Enables or disables the CPU fan speed control function. **Enabled** allows the CPU fan to run at different speed according to the CPU temperature. You can adjust the fan speed with EasyTune based on system requirements. If disabled, the CPU fan runs at full speed. (Default: Enabled)

☞ CPU Smart FAN Mode

Specifies how to control CPU fan speed. This item is configurable only if **CPU Smart FAN Control** is set to **Enabled**.

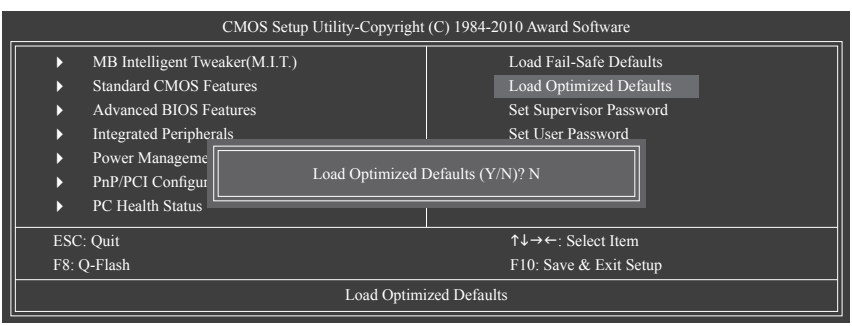
- ⏩ Auto — Lets the BIOS automatically detect the type of CPU fan installed and sets the optimal CPU fan control mode. (Default)
- ⏩ Voltage — Sets Voltage mode for a 3-pin CPU fan.
- ⏩ PWM — Sets PWM mode for a 4-pin CPU fan.

2-10 Load Fail-Safe Defaults



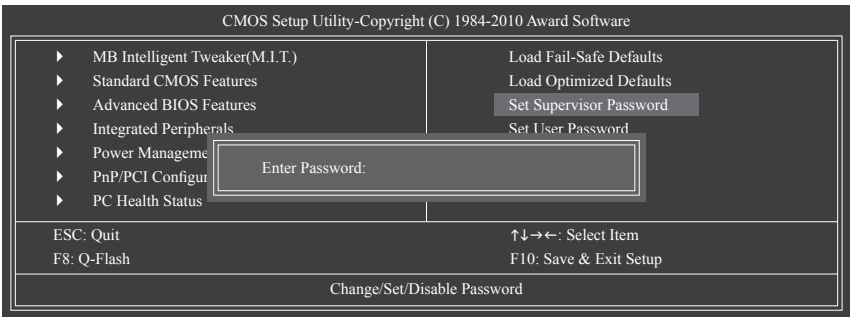
Press <Enter> on this item and then press the <Y> key to load the safest BIOS default settings.
In case system instability occurs, you may try to load Fail-Safe defaults, which are the safest and most stable BIOS settings for the motherboard.

2-11 Load Optimized Defaults



Press <Enter> on this item and then press the <Y> key to load the optimal BIOS default settings.
The BIOS defaults settings help the system to operate in optimum state. Always load the Optimized defaults after updating the BIOS or after clearing the CMOS values.

2-12 Set Supervisor/User Password



Press <Enter> on this item and type the password with up to 8 characters and then press <Enter>. You will be requested to confirm the password. Type the password again and press <Enter>.

The BIOS Setup program allows you to specify two separate passwords:

☞ **Supervisor Password**

When a system password is set and the **Password Check** item in **Advanced BIOS Features** is set to **Setup**, you must enter the supervisor password for entering BIOS Setup and making BIOS changes.

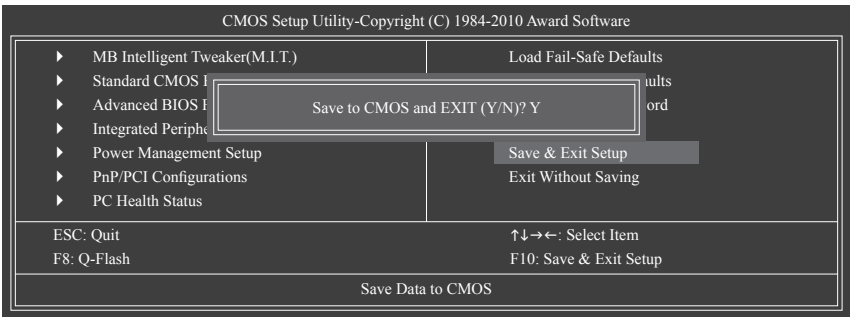
When the **Password Check** item is set to **System**, you must enter the supervisor password (or user password) at system startup and when entering BIOS Setup.

☞ **User Password**

When the **Password Check** item is set to **System**, you must enter the supervisor password (or user password) at system startup to continue system boot. In BIOS Setup, you must enter the supervisor password if you wish to make changes to BIOS settings. The user password only allows you to view the BIOS settings but not to make changes.

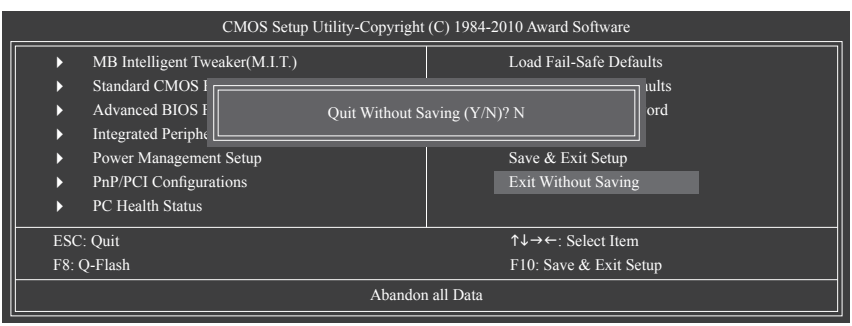
To clear the password, press <Enter> on the password item and when requested for the password, press <Enter> again. The message "PASSWORD DISABLED" will appear, indicating the password has been cancelled.

2-13 Save & Exit Setup



Press <Enter> on this item and press the <Y> key. This saves the changes to the CMOS and exits the BIOS Setup program. Press <N> or <Esc> to return to the BIOS Setup Main Menu.

2-14 Exit Without Saving



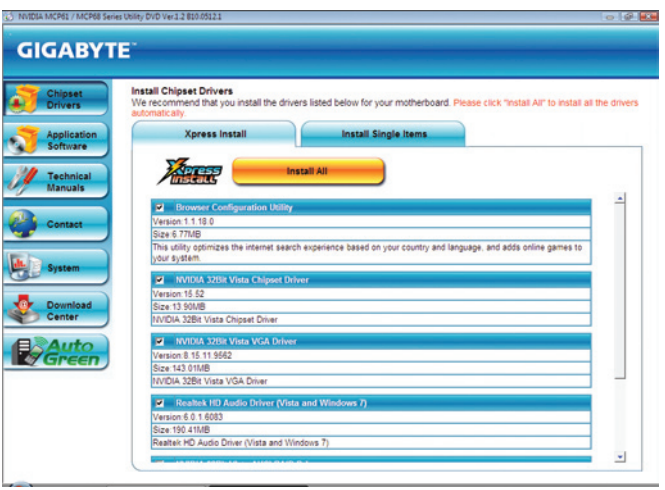
Press <Enter> on this item and press the <Y> key. This exits the BIOS Setup without saving the changes made in BIOS Setup to the CMOS. Press <N> or <Esc> to return to the BIOS Setup Main Menu.

Chapter 3 Drivers Installation

- Before installing the drivers, first install the operating system.
- After installing the operating system, insert the motherboard driver disk into your optical drive. The driver Autorun screen is automatically displayed which looks like that shown in the screen shot below. (If the driver Autorun screen does not appear automatically, go to My Computer, double-click the optical drive and execute the **Run**.exe program.)

3-1 Installing Chipset Drivers

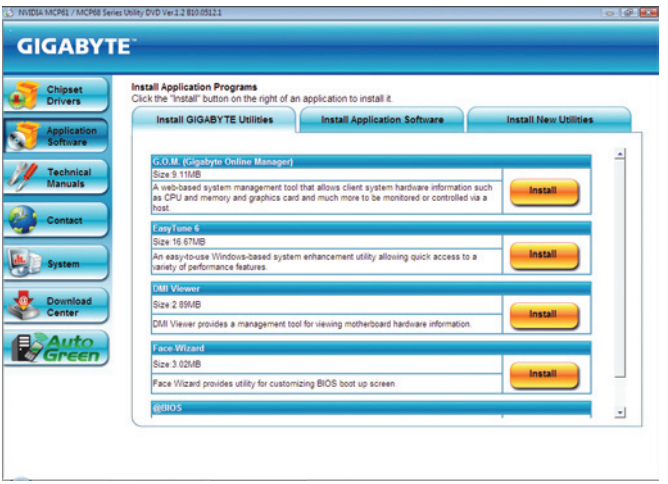
After inserting the driver disk, "Xpress Install" will automatically scan your system and then list all the drivers that are recommended to install. You can click the **Install All** button and "Xpress Install" will install all the recommended drivers. Or click **Install Single Items** to manually select the drivers you wish to install.



- Please ignore the popup dialog box(es) (e.g. the **Found New Hardware Wizard**) displayed when "Xpress Install" is installing the drivers. Failure to do so may affect the driver installation.
- Some device drivers will restart your system automatically during the driver installation. After the system restart, "Xpress Install" will continue to install other drivers.
- After the drivers are installed, follow the on-screen instructions to restart your system. You can install other applications included in the motherboard driver disk.
- For USB 2.0 driver support under the Windows XP operating system, please install the Windows XP Service Pack 1 or later. After installing the SP1 (or later), if a question mark still exists in **Universal Serial Bus Controller** in **Device Manager**, please remove the question mark (by right-clicking your mouse and select **Uninstall**) and restart the system. (The system will then autodetect and install the USB 2.0 driver.)

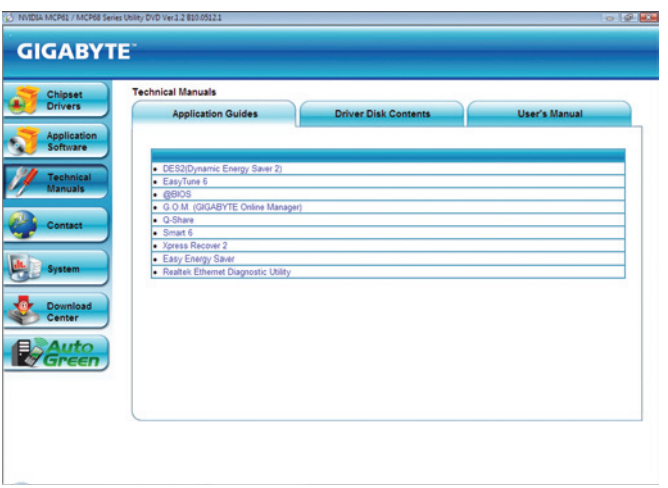
3-2 Application Software

This page displays all the utilities and applications that GIGABYTE develops and some free software. You can click the **Install** button on the right of an item to install it.


GIGABYTE
Chipset Drivers
Application Software
Technical Manuals
Contact
System
Download Center
Auto Green
Install Application Programs
Click the "Install" button on the right of an application to install it.
Install GIGABYTE Utilities
Install Application Software
Install New Utilities
G.O.M. (Gigabyte Online Manager)
Size:9.11MB
A web-based system management tool that allows client system hardware information such as CPU and memory and graphics card and much more to be monitored or controlled via a host.
Install
EasyTune 6
Size:16.67MB
An easy-to-use Windows-based system enhancement utility allowing quick access to a variety of performance features.
Install
DMI Viewer
Size:2.89MB
DMI Viewer provides a management tool for viewing motherboard hardware information.
Install
Face Wizard
Size:3.02MB
Face Wizard provides utility for customizing BIOS boot up screen.
Install
@BIOS

3-3 Technical Manuals

This page provides GIGABYTE's application guides, content descriptions for this driver disk, and the motherboard manuals.

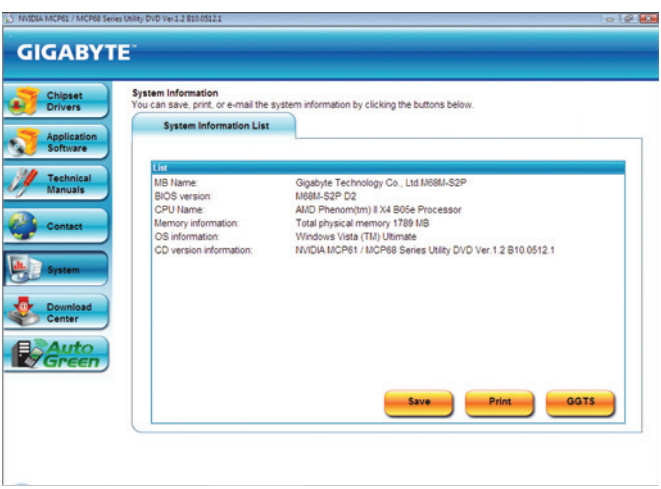


3-4 Contact

For the detailed contact information of the GIGABYTE Taiwan headquarter or worldwide branch offices, click the URL on this page to link to the GIGABYTE website.

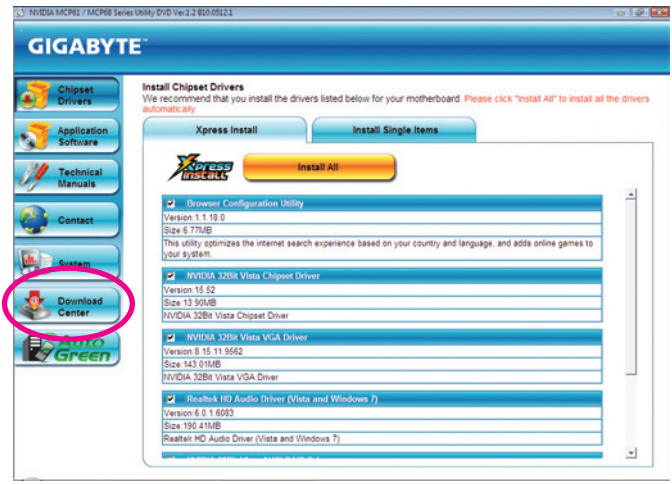
3-5 System

This page provides the basic system information.



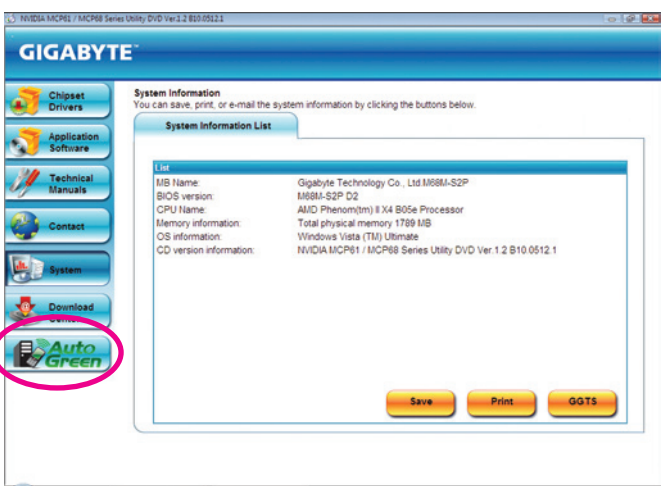
3-6 Download Center

To update the BIOS, drivers, or applications, click the **Download Center** button to link to the GIGABYTE website. The latest version of the BIOS, drivers, or applications will be displayed.



3-7 New Utilities

This page provides a quick link to GIGABYTE's lately developed utilities for users to install. You can click the **Install** button on the right of an item to install it.



Chapter 4 Unique Features

4-1 Xpress Recovery2

Xpress Recovery2 is a utility that allows you to quickly compress and back up your system data and perform restoration of it. Supporting NTFS, FAT32, and FAT16 file systems, Xpress Recovery2 can back up data on PATA and SATA hard drives and restore it.

Before You Begin:

- Xpress Recovery2 will check the first physical hard drive (Note) for the operating system. Xpress Recovery2 can only back up/restore the first physical hard drive that has the operating system installed.
- As Xpress Recovery2 will save the backup file at the end of the hard drive, make sure to leave enough un-allocated space in advanced (10 GB or more is recommended; actual size requirements vary, depending on the amount of data).
- It is recommended to back up your system soon after the operating system and drivers are installed.
- The amount of data and hard drive access speed may affect the speed at which the data is backed up/restored.
- It takes longer to back up a hard drive than to restore it.

System Requirements:

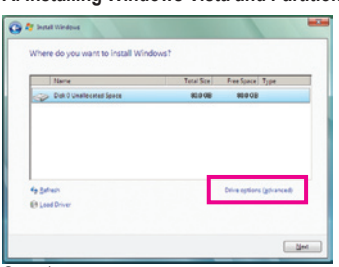
- At least 512 MB of system memory
- VESA compatible graphics card
- Windows XP with SP1 or later, Windows Vista

- Xpress Recovery and Xpress Recovery2 are different utilities. For example, a backup file created with Xpress Recovery cannot be restored using Xpress Recovery2.
- USB hard drives are not supported.
- Hard drives in RAID/AHCI mode are not supported.

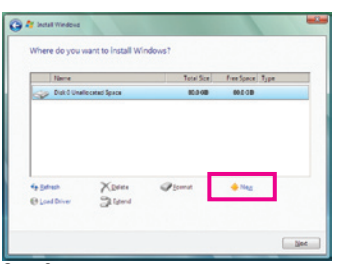
Installation and Configuration:

Turn on your system to boot from the Windows Vista setup disk.

A. Installing Windows Vista and Partitioning the Hard Drive

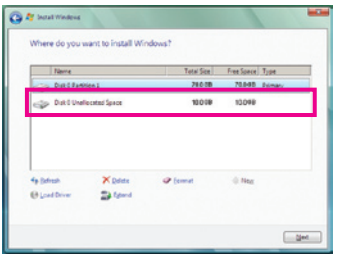


Step 1:
Click **Drive options**.



Step 2:
Click **New**.

(Note) Xpress Recovery2 checks the first physical hard drive in the following sequence: The first PATA IDE connector, the second PATA IDE connector, the first SATA connector, the second SATA connector and so forth. For example, when hard drives are attached to the first IDE and the first SATA connectors, the hard drive on the first IDE connector is the first physical drive. When hard drives are attached to the first and second SATA connectors, the hard drive on the first SATA connector is the first physical drive.

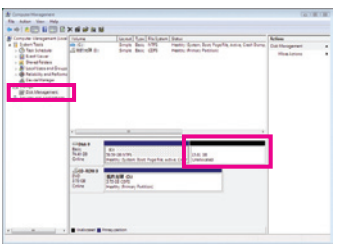


Step 3:

When partitioning your hard drive, make sure to leave unallocated space (10 GB or more is recommended; actual size requirements vary, depending on the amount of data) and begin the installation of the operating system.

Step 4:

After the operating system is installed, right-click the **Computer** icon on your desktop and select **Manage**. Go to **Disk Management** to check disk allocation.



Step 5:

Xpress Recovery2 will save the backup file to the unallocated space (black stripe along the top). Please note that if there is no enough unallocated space, Xpress Recovery2 cannot save the backup file.

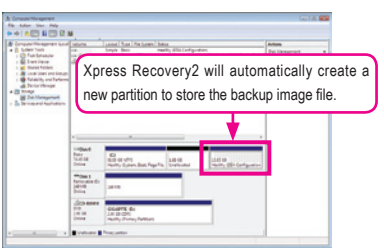
B. Accessing Xpress Recovery2

1. Boot from the motherboard driver disk to access Xpress Recovery2 for the first time. When you see the following message: `Press any key to startup Xpress Recovery2`, press any key to enter Xpress Recovery2.
2. After you use the backup function in Xpress Recovery2 for the first time, Xpress Recovery2 will stay permanent in your hard drive. If you wish to enter Xpress Recovery2 later, simply press <F9> during the POST.

C. Using the Backup Function in Xpress Recovery2

Step 1:

Select **BACKUP** to start backing up your hard drive data.



Step 2:

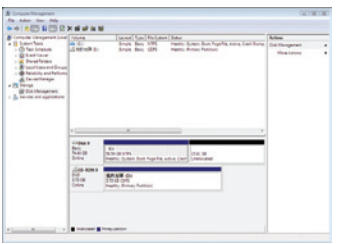
When finished, go to **Disk Management** to check disk allocation.

D. Using the Restore Function in Xpress Recovery2

Select **RESTORE** to restore the backup to your hard drive in case the system breaks down. The **RESTORE** option will not be present if no backup is created before.

E. Removing the Backup

Step 1:
If you wish to remove the backup file, select **REMOVE**.



Step 2:
After the backup file is removed, no backup image file will be present in **Disk Management** and hard drive space will be freed up.

F. Exiting Xpress Recovery2

Select **REBOOT** to exit Xpress Recovery2.

4-2 BIOS Update Utilities

GIGABYTE motherboards provide two unique BIOS update tools, Q-Flash™ and @BIOS™. GIGABYTE Q-Flash and @BIOS are easy-to-use and allow you to update the BIOS without the need to enter MS-DOS mode. Additionally, this motherboard features the DualBIOS™ design, which enhances protection for the safety and stability of your computer by adding one more physical BIOS chip.

What is DualBIOS™?

Motherboards that support DualBIOS have two BIOS onboard, a main BIOS and a backup BIOS. Normally, the system works on the main BIOS. However, if the main BIOS is corrupted or damaged, the backup BIOS will take over on the next system boot and copy the BIOS file to the main BIOS to ensure normal system operation. For the sake of system safety, users cannot update the backup BIOS manually.

What is Q-Flash™?

With Q-Flash you can update the system BIOS without having to enter operating systems like MS-DOS or Window first. Embedded in the BIOS, the Q-Flash tool frees you from the hassles of going through complicated BIOS flashing process.

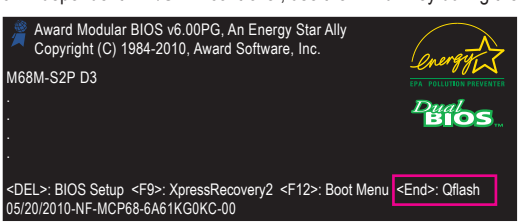
What is @BIOS™?

@BIOS allows you to update the system BIOS while in the Windows environment. @BIOS will download the latest BIOS file from the nearest @BIOS server site and update the BIOS.

4-2-1 Updating the BIOS with the Q-Flash Utility

A. Before You Begin

1. From GIGABYTE's website, download the latest compressed BIOS update file that matches your motherboard model.
2. Extract the file and save the new BIOS file (e.g. M68MS2P2.F1) to your floppy disk, USB flash drive, or hard drive. Note: The USB flash drive or hard drive must use FAT32/16/12 file system.
3. Restart the system. During the POST, press the <End> key to enter Q-Flash. Note: You can access Q-Flash by either pressing the <End> key during the POST or pressing the <F8> key in BIOS Setup. However, if the BIOS update file is saved to a hard drive in RAID/AHCI mode or a hard drive attached to an independent IDE/SATA controller, use the <End> key during the POST to access Q-Flash.


Award Modular BIOS v6.00PG, An Energy Star Ally
Copyright (C) 1984-2010, Award Software, Inc.
M68M-S2P D3
<DEL>: BIOS Setup <F9>: XpressRecovery2 <F12>: Boot Menu <End>: Qflash
05/20/2010-NF-MCP68-6A61KG0KC-00

Because BIOS flashing is potentially risky, please do it with caution. Inadequate BIOS flashing may result in system malfunction.

B. Updating the BIOS

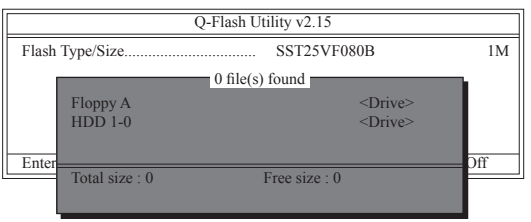
When updating the BIOS, choose the location where the BIOS file is saved. The following procedure assumes that you save the BIOS file to a floppy disk.

Step 1:

1. Insert the floppy disk containing the BIOS file into the floppy disk drive. In the main menu of Q-Flash, use the up or down arrow key to select **Update BIOS from Drive** and press <Enter>.

- The **Save Main BIOS to Drive** option allows you to save the current BIOS file.
- Q-Flash only supports USB flash drive or hard drives using FAT32/16/12 file system.
- If the BIOS update file is saved to a hard drive in RAID/AHCI mode or a hard drive attached to an independent IDE/SATA controller, use the <End> key during the POST to access Q-Flash.

2. Select **Floppy A** and press <Enter>.



3. Select the BIOS update file and press <Enter>.

Make sure the BIOS update file matches your motherboard model.

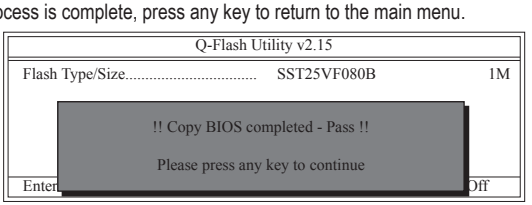
Step 2:

The process of the system reading the BIOS file from the floppy disk is displayed on the screen. When the message "Are you sure to update BIOS?" appears, press <Enter> to begin the BIOS update. The monitor will display the update process.

- **Do not turn off or restart the system when the system is reading/updating the BIOS.**
- **Do not remove the floppy disk, USB flash drive, or hard drive when the system is updating the BIOS.**

Step 3:

When the update process is complete, press any key to return to the main menu.

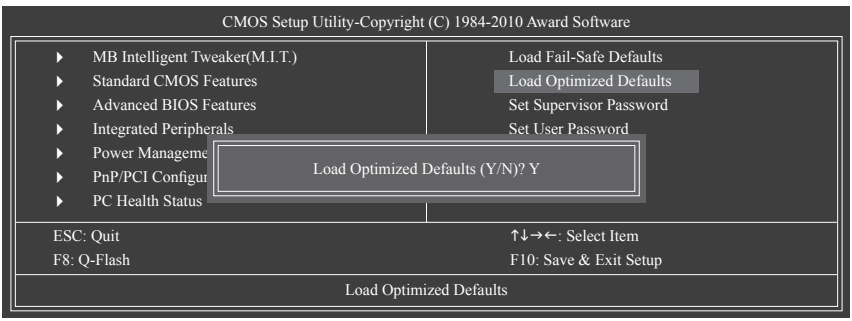


Step 4:

Press <Esc> and then <Enter> to exit Q-Flash and reboot the system. As the system boots, you should see the new BIOS version is present on the POST screen.

Step 5:

During the POST, press <Delete> to enter BIOS Setup. Select **Load Optimized Defaults** and press <Enter> to load BIOS defaults. System will re-detect all peripheral devices after a BIOS update, so we recommend that you reload BIOS defaults.



Press <Y> to load BIOS defaults

Step 6:

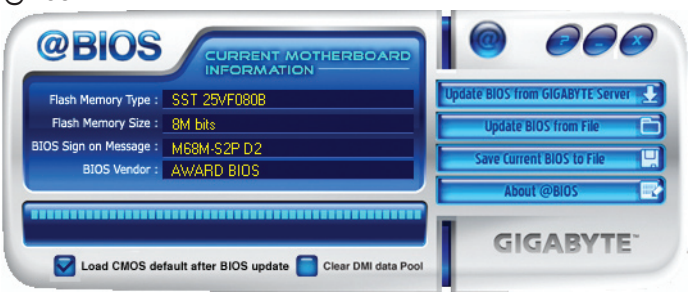
Select **Save & Exit Setup** and then press <Y> to save settings to CMOS and exit BIOS Setup. The procedure is complete after the system restarts.

4-2-2 Updating the BIOS with the @BIOS Utility

A. Before You Begin

1. In Windows, close all applications and TSR (Terminate and Stay Resident) programs. This helps prevent unexpected failures when performing a BIOS update.
2. During the BIOS update process, ensure the Internet connection is stable and do NOT interrupt the Internet connection (for example, avoid a power loss or switching off the Internet). Failure to do so may result in a corrupted BIOS or a system that is unable to start.
3. Do not use the G.O.M. (GIGABYTE Online Management) function when using @BIOS.
4. GIGABYTE product warranty does not cover any BIOS damage or system failure resulting from an inadequate BIOS flashing.

B. Using @BIOS


@BIOS
CURRENT MOTHERBOARD INFORMATION
Flash Memory Type : SST 25VF080B
Flash Memory Size : 8M bits
BIOS Sign on Message : M68M-S2P D2
BIOS Vendor : AWARD BIOS
Update BIOS from GIGABYTE Server
Update BIOS from File
Save Current BIOS to File
About @BIOS
GIGABYTE
Load CMOS default after BIOS update
Clear DMI data Pool

1. **Update the BIOS Using the Internet Update Function:**

   Click **Update BIOS from GIGABYTE Server**, select the @BIOS server site closest to your location and then download the BIOS file that matches your motherboard model. Follow the on-screen instructions to complete.

   If the BIOS update file for your motherboard is not present on the @BIOS server site, please manually download the BIOS update file from GIGABYTE's website and follow the instructions in "Update the BIOS without Using the Internet Update Function" below.

2. **Update the BIOS without Using the Internet Update Function:**

   Click **Update BIOS from File**, then select the location where you save the BIOS update file obtained from the Internet or through other source. Follow the on-screen instructions to complete.

3. **Save the Current BIOS File:**

   Click **Save Current BIOS to File** to save the current BIOS file.

4. **Load BIOS Defaults after BIOS Update:**

   Select the **Load CMOS default after BIOS update** check box and then the system will automatically load BIOS defaults after BIOS update and after the system restarts.

C. After Updating the BIOS

Restart your system after updating the BIOS.

Make sure that the BIOS file to be flashed matches your motherboard model. Updating the BIOS with an incorrect BIOS file could cause your system not to boot.

4-3 EasyTune 6

GIGABYTE's EasyTune 6 is a simple and easy-to-use interface that allows users to fine-tune their system settings or do overclock/overvoltage in Windows environment. The user-friendly EasyTune 6 interface also includes tabbed pages for CPU and memory information, letting users read their system-related information without the need to install additional software.

The EasyTune 6 Interface

Tabs Information

Tab	Function
CPU	The **CPU** tab provides information on the installed CPU and motherboard.
Memory	The **Memory** tab provides information on the installed memory module(s). You can select memory module on a specific slot to see its information.
Tuner	The **Tuner** tab allows you to change system clock settings and voltages. • **Easy mode** allows you to adjust the CPU FSB only. • **Advanced mode** allows you to individually change system clock settings and voltages settings using the sliders. • **Core Boost** is configurable only in Advanced mode. With Core Boost (Note 1) enabled, you can unlock hidden CPU cores or disable the cores that have been activated (Note 2). • **Save** allows you to save the current settings to a new profile (.txt file). • **Load** allows you to load previous settings from a profile. After making changes in **Easy mode**/**Advanced mode**, be sure to click **Set** for these changes to take effect or click **Default** to restore to default values.
Graphics	The **Graphics** tab allows you to change the core clock and memory clock for your ATI or NVIDIA graphics card.
Smart	The **Smart** tab allows you to specify a Smart Fan mode. Smart Fan Advanced mode allows the CPU fan speed to be changed linearly based on the CPU temperature thresholds you set.
HW Monitor	The **HW Monitor** tab allows you to monitor hardware temperature, voltage and fan speed and set temperature/fan speed alarm. You can choose the alert sound from the buzzer or use your own sound file (.wav file).

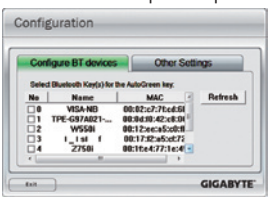
(Note 1) Restart the computer after enabling Core Boost for the settings to take effect.
(Note 2) The number of CPU cores that can be enabled/disabled depends on the CPU being used.

Available functions in EasyTune 6 may differ by motherboard model. Grayed-out area(s) indicates that the item is not configurable or the function is not supported.

Incorrectly doing overclock/overvoltage may result in damage to the hardware components such as CPU, chipset, and memory and reduce the useful life of these components. Before you do the overclock/overvoltage, make sure that you fully know each function of EasyTune 6, or system instability or other unexpected results may occur.

4-4 Auto Green

Auto Green is an easy-to-use tool that provides users with simple options to enable system power savings via a Bluetooth cell phone. When the phone is out of the range of the computer's Bluetooth receiver, the system will enter the specified power saving mode.



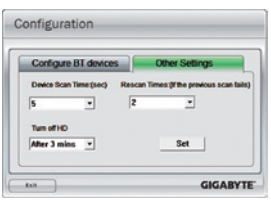
The Configuration dialog box:

First, you have to set your Bluetooth cell phone as a portable key. On the Auto Green main menu, click **Configure** and then click **Configure BT devices**. Select the Bluetooth cell phone that you want to use as the portable key (Note 1). (If the screen doesn't display your Bluetooth cell phone, click **Refresh** to let Auto Green re-detect the device.)

Before creating a Bluetooth cell phone key, make sure your motherboard has a Bluetooth receiver and you have turned on the search and Bluetooth functions on your phone.

Configuring the Bluetooth cell phone key:

After you select a cell phone, the **Add Bluetooth Device Wizard** as shown on the left will appear. Enter a passkey (8~16 digits recommended) which will be used for pairing with the cell phone. Then enter the same passkey on your cell phone.



Configuring other Bluetooth settings:

On the **Other Settings** tab, you can set how much time it takes to scan your Bluetooth cell phone key, how many times to rescan the key to make sure it is in range of your computer, and when to turn off the hard drive if the system energy saving state lasts over the predetermined period of time. After completing the settings, click **Set** for the settings to take effect and then click **Exit** to quit.

- Device Scan Time (sec.):
  Set the length of time Auto Green scans your Bluetooth cell phone key, ranging from 5 to 30 seconds in 5-second increment. Auto Green searches for the key based on the length of time you set.
- Rescan Times:
  Set how many times Auto Green will rescan your Bluetooth cell phone key if it does not detect it, ranging from 2 to 5 times. Auto Green will keep rescanning according to the times you set. When the times limit is reached and your Bluetooth cell phone key is still not detected, the system will enter the selected energy saving mode.
- Turn off HD:
  Set when to turn off the hard drive. If the system inactivity time exceeds the specified time limit, the hard drive will be turned off.

Selecting a system energy saving mode:

Depending on your needs, select a system power saving mode on the Auto Green main menu and click **Save** to save the settings.

Button	Description
Standby	Enters Power on Suspend mode
Suspend	Enters Suspend to RAM mode
Disable	Disables this function

The Bluetooth dongle included in the motherboard package(Note 2) allows you to wake up the system from Suspend to RAM mode without the need to press the power button first.

(Note 1) If your cell phone has been configured as the Auto Green key, you'll not be able to use it to connect to other Bluetooth device(s) when Auto Green is enabled.

(Note 2) Whether the Bluetooth dongle is included depends on the motherboard models. Before installing the Bluetooth dongle, be sure to turn off other Bluetooth receiver on your computer.

Chapter 5 Appendix

5-1 Configuring SATA Hard Drive(s)

To configure SATA hard drive(s), follow the steps below:

A. Install SATA hard drive(s) in your computer.
B. Configure SATA controller mode in BIOS Setup.
C. Configuring RAID set in RAID BIOS. (Note)
D. Make a floppy disk containing the SATA RAID driver for Windows XP. (Note)
E. Install the SATA RAID driver (Note) and operating system.

Before you begin

Please prepare:

- At least two SATA hard drives (to ensure optimal performance, it is recommended that you use two hard drives with identical model and capacity). If you do not want to create RAID, you may prepare only one hard drive.
- An empty formatted floppy disk.
- Windows Vista/XP setup disk.
- Motherboard driver disk.

5-1-1 Configuring the Onboard SATA Controller

A. Installing SATA hard drive(s) in your computer

Attach one end of the SATA signal cable to the rear of the SATA hard drive and the other end to available SATA port on the motherboard. Then connect the power connector from your power supply to the hard drive.

(Note) Skip this step if you do not want to create RAID array on the SATA controller.

B. Configuring SATA controller mode in BIOS Setup

Make sure to configure the SATA controller mode correctly in system BIOS Setup.

Step 1:

Turn on your computer and press <Delete> to enter BIOS Setup during the POST (Power-On Self-Test). Under **Integrated Peripherals**, make sure **NV Serial-ATA Controller** is enabled. To enable RAID, go to the **Serial-ATA RAID Config** sub-menu (Figure 1).

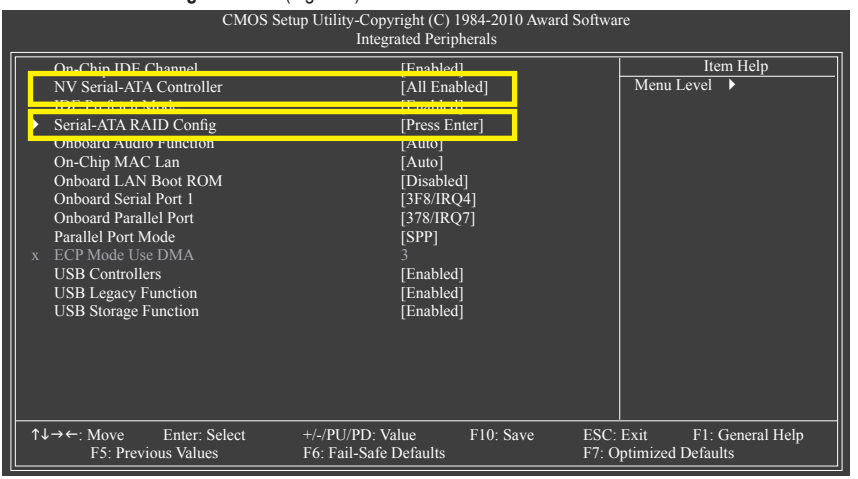

CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
Integrated Peripherals
Item Help
Menu Level
NV Serial-ATA Controller [All Enabled]
Serial-ATA RAID Config [Press Enter]
On-Chip MAC Lan [Auto]
Onboard LAN Boot ROM [Disabled]
Onboard Serial Port 1 [3F8/IRQ4]
Onboard Parallel Port [378/IRQ7]
Parallel Port Mode [SPP]
ECP Mode Use DMA 3
USB Controllers [Enabled]
USB Legacy Function [Enabled]
USB Storage Function [Enabled]
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 1

Set **NV SATA RAID function** to **Enabled** to enable RAID control for each SATA connector. Then enable the SATA channels with hard drives that you want to use for RAID (for example, **NV SATA 1 Primary RAID** controls the SATA2_0 connector and **NV SATA 1 Secondary RAID** controls the SATA2_1 connector) (Figure 2).

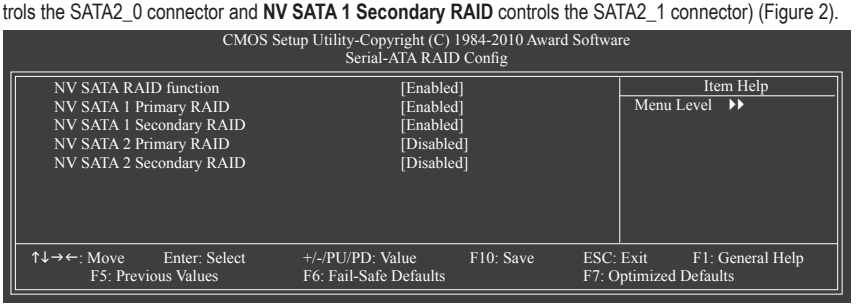

CMOS Setup Utility-Copyright (C) 1984-2010 Award Software
Serial-ATA RAID Config
Item Help
Menu Level
NV SATA RAID function [Enabled]
NV SATA 1 Primary RAID [Enabled]
NV SATA 1 Secondary RAID [Enabled]
NV SATA 2 Primary RAID [Disabled]
NV SATA 2 Secondary RAID [Disabled]
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 2

Step 2:

Save changes and exit BIOS Setup.

The BIOS Setup menus described in this section may differ from the exact settings for your motherboard. The actual BIOS Setup menu options you will see shall depend on the motherboard you have and the BIOS version.

C. Configuring RAID set in RAID BIOS

Enter the RAID BIOS setup utility to configure a RAID array. For a non-RAID configuration, please skip this step and proceed to the installation of Windows operating system.

Step 1:

After the POST memory test begins and before the operating system boot begins, look for a message which says "Press <F10> to enter RAID setup utility" (Figure 3). Hit the <F10> key to enter the NVIDIA RAID setup utility.

Figure 3

Step 2:

The **Define a New Array** screen is the first option screen when you enter the NVIDIA RAID setup utility (Figure 4). You can press the <Tab> key to move from field to field until the appropriate field is highlighted.

Step 3:

In the **RAID Mode** field, use the up or down arrow key to select a RAID mode. The supported RAID modes include Mirroring, Striping, Stripe Mirroring, and Spanning. The following procedure demonstrates how a RAID 0 array (Striping) is created.

Step 4:

If RAID 0 (Striping) is selected, you can manually set the stripe block size. In the **Striping Block** field, use the up or down arrow key to set the striping block size. Striping block size is given in kilobytes. We recommend you leaving it at the default **Optimal**, which is 64 KB. The striping block size can be set from 4 KB to 128 KB.

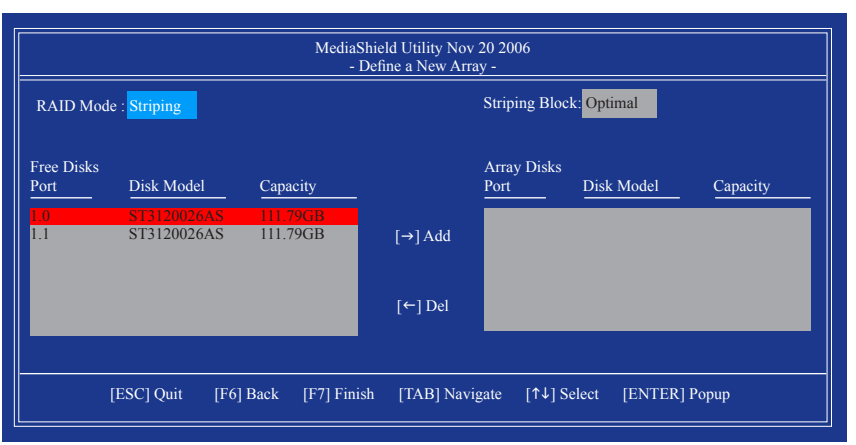

MediaShield Utility Nov 20 2006
- Define a New Array -
RAID Mode : Striping
Striping Block: Optimal
Free Disks
Port Disk Model Capacity
1.0 ST3120026AS 111.79GB
1.1 ST3120026AS 111.79GB
[→] Add
[←] Del
Array Disks
Port Disk Model Capacity
[ESC] Quit [F6] Back [F7] Finish [TAB] Navigate [↑↓] Select [ENTER] Popup

Figure 4

Step 5:

Next, select the hard drives which you wish to be included in the disk array. The **Free Disks** block displays the information about the SATA hard drives that are available for use as RAID array drives. Press <Tab> to move to the **Free Disks** block. Select the target hard drives using the up or down arrow key and use the right arrow key to add the hard drives to the **Array Disks** block (Figure 5).

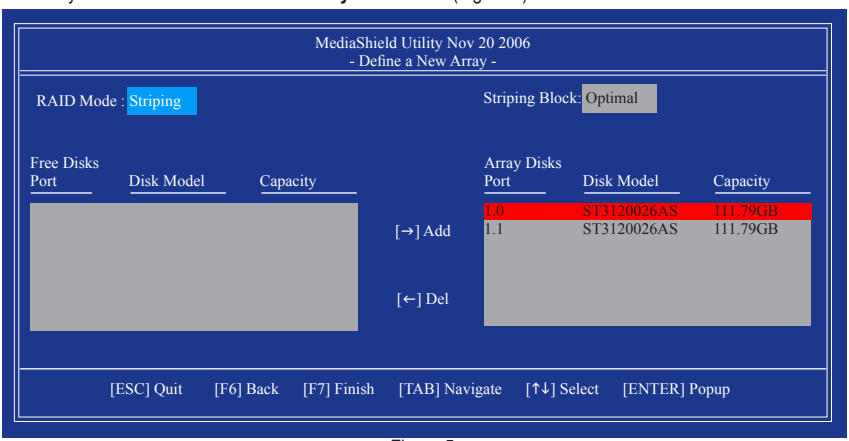


Figure 5

Step 6:

After assigning the RAID drives, press <F7>. A message which says "Clear disk data?" appears (Figure 6). Press <Y> to confirm or press <N> to cancel. (If the hard drives contain a previously created RAID array, you need to press <Y> to clear the data in the hard drives.)

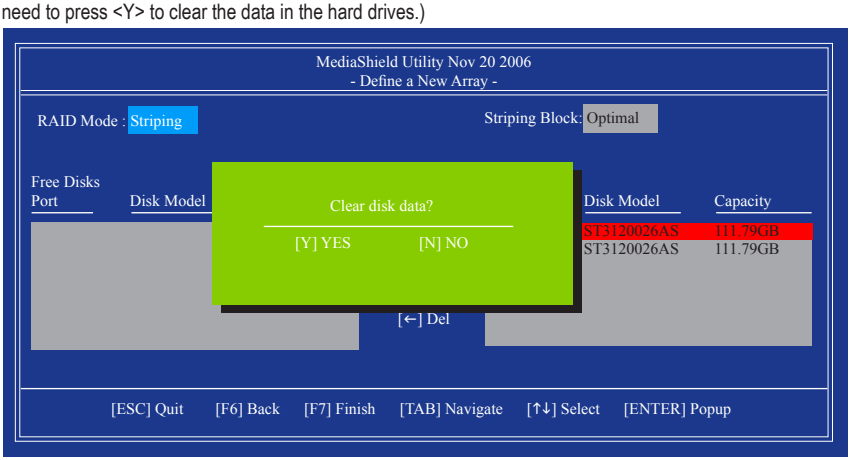


Figure 6

After that, the **Array List** screen appears, displaying the RAID array that you have created (Figure 7).

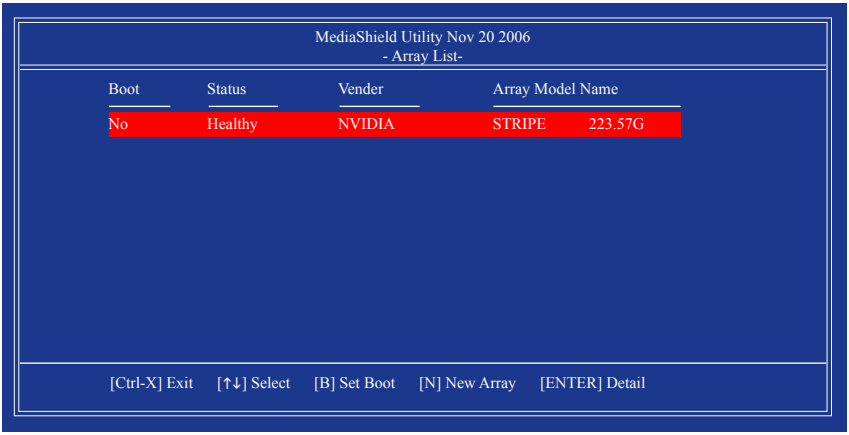


Figure 7

To read more information about the RAID array, press <Enter> to enter the **Array Detail** screen (Figure 8), which shows various information about the array, including the RAID mode, stripe block size, hard drive model name, and hard drive capacity, etc.

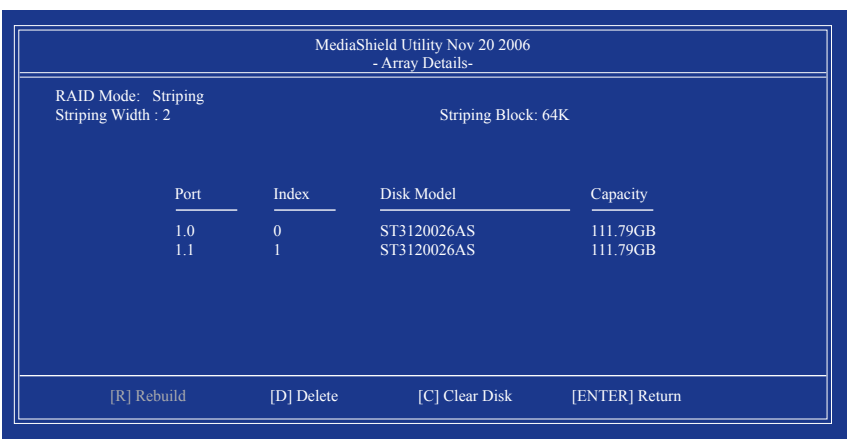


Figure 8

To delete the array, press <D> in the **Array Detail** screen. When the "Delete this array?" message appears, press <Y> to confirm or <N> to cancel. Press <Enter> to return to the **Array List** screen.

To exit the NVIDIA RAID setup utility, press <Esc> in the main menu or <Ctrl>+<X> in the **Array List** screen.

Now, you can proceed to the installation of the SATA controller driver and operating system.

5-1-2 Making a SATA RAID Driver Diskette

To successfully install operating system onto RAID drive(s), you need to install the SATA controller driver during the OS installation. Without the driver, the hard drive may not be recognized during the Windows setup process. First of all, copy the driver for the SATA controller from the motherboard driver disk to a floppy disk. For installing Windows Vista, you also can copy the SATA controller driver from the motherboard driver disk to a USB flash drive. See the instructions below about how to copy the driver in MS-DOS and Windows mode.

In MS-DOS mode:

Prepare a startup disk that has CD-ROM support and a blank formatted floppy disk.

Steps:

1: Boot from the startup disk.

2: Remove the startup disk and insert the prepared floppy disk and the motherboard driver disk (here we assume that the drive letter for your optical drive is D:\).

3: At the A:\> prompt, type the following command. Press <Enter> after the command. Refer to Table 1 for the SATA driver directories for different Windows operating systems and change the directory in the command according to the operating system to be installed. For example, to copy the RAID driver for Windows XP 32-bit operating system, type:

```
A:\>copy d:\bootdrv\uda\winxp\sataraid\*.*
```

Figure 1

Operating System	Directory
Windows XP 32-bit	Bootdrv\UDA\WinXP\sataraid
Windows XP 64-bit	Bootdrv\UDA\Win64\sataraid
Windows Vista 32-bit	Bootdrv\UDA\WinVista\sataraid
Windows Vista 64-bit	Bootdrv\UDA\WinVista64\sataraid
Windows 7 32-bit	Bootdrv\UDA\Win7\sataraid
Windows 7 64-bit	Bootdrv\UDA\Win764\sataraid

Table 1

In Windows mode:

Steps:

1: Use an alternative system and insert the motherboard driver disk.

2: From your optical drive folder, double click the **Menu.exe** file in the **BootDrv** folder (Figure 2). A Command Prompt window will open similar to that in Figure 3.

3: Insert the blank formatted disk. Depending on the operating system to be installed, select the controller driver by pressing the corresponding letter from the menu and press <Enter>. For example, from the menu in Figure 3, select **2) NVIDIA RAID driver (XP)** for the RAID driver for Windows XP 32-bit operating system. Your system will then automatically copy the driver files to the floppy disk. Press any key to exit when finished.

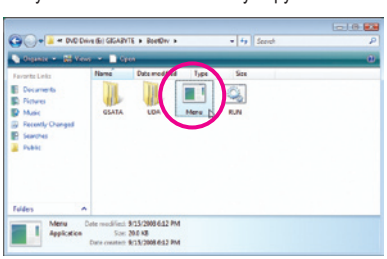


Figure 2

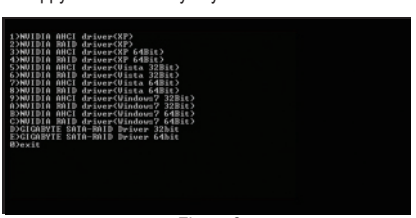


Figure 3

5-1-3 Installing the SATA RAID Driver and Operating System

With the SATA RAID driver diskette and correct BIOS settings, you are ready to install Windows Vista/XP onto your hard drive(s). The followings are examples of Windows XP and Vista installation.

A. Installing Windows XP

Step 1:

Restart your system to boot from the Windows XP setup disk and press <F6> as soon as you see the message "Press F6 if you need to install a 3rd party SCSI or RAID driver" (Figure 1). A screen will then appear asking you to specify additional device.

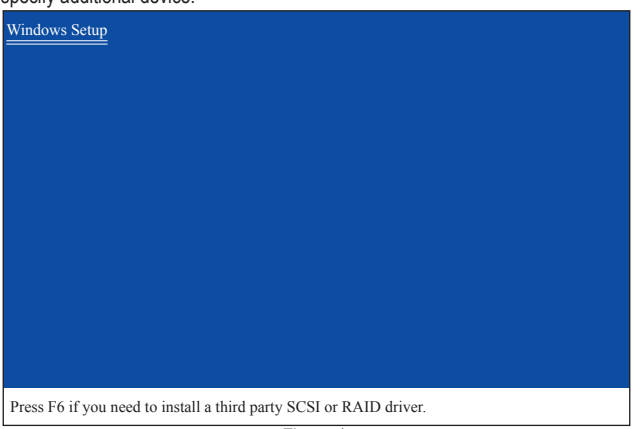


Figure 1

Step 2:

The screen displays two drivers, both of which need to be installed. First select **NVIDIA RAID Driver** and press <Enter>. On the next screen, press <S> to return to the screen in Figure 2. Then select **NVIDIA nForce Storage Controller** and press <Enter>. When both of the two drivers appear on the confirmation screen, press <Enter> to continue the driver installation. When completed, proceed with the Windows XP installation.

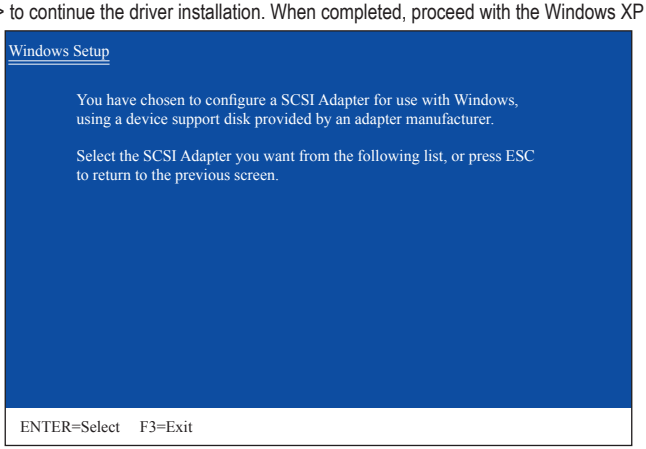

Windows Setup
You have chosen to configure a SCSI Adapter for use with Windows, using a device support disk provided by an adapter manufacturer.
Select the SCSI Adapter you want from the following list, or press ESC to return to the previous screen.
ENTER=Select F3=Exit

Figure 2

Step 3:

On the next screen, press <Enter> to continue the driver installation. After the driver installation, you can proceed with the Windows XP installation.

B. Installing Windows Vista

(The procedure below assumes that only one RAID array exists in your system.)

Step 1:

Restart your system to boot from the Windows Vista setup disk and perform standard OS installation steps. When a screen similar to that below appears (RAID hard drive will not be detected at this stage), select **Load Driver** (Figure 3).

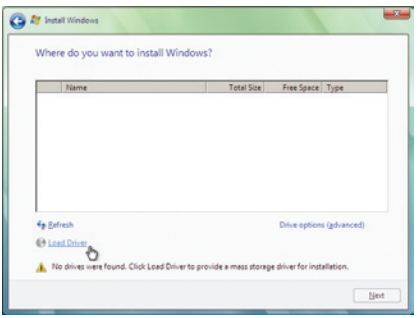


Figure 3

Step 2:

Insert the motherboard driver disk (Method A) or the removable storage device such as USB flash drive that contains the SATA RAID driver (Method B), then specify the location of the driver (Figure 4). Note: For users using a SATA optical drive, be sure to copy the driver files from the motherboard driver disk to a USB flash drive before installing Windows Vista (go to the **BootDrv\UDA\WinVista** folder and save the whole **sataraid** folder to the USB flash drive). Then use Method B to load the driver.

Method A:

Insert the motherboard driver disk into your system and browse to the following directory:

BootDrv\UDA\WinVista\sataraid

For Windows Vista 64-bit, browse to **BootDrv\UDA\WinVista64\sataraid**.

Method B:

Insert the USB flash drive containing the driver files and browse to the **sataraid** folder.

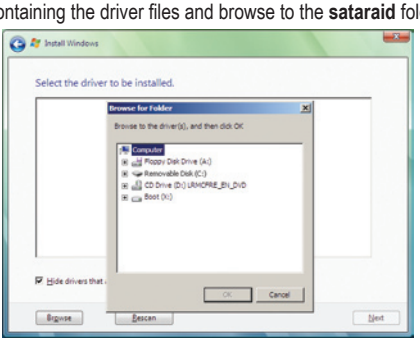


Figure 4

Step 3:

When a screen as shown in Figure 5 appears, select **NVIDIA nForce RAID Controller** and click **Next**.

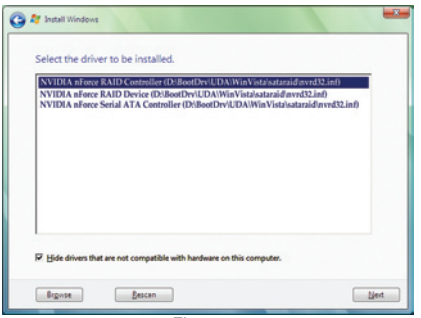

Install Windows
Select the driver to be installed.
NVIDIA nForce RAID Controller (D:\BootDrv\UDA\WinVista\sataraid\nvrd32.inf)
NVIDIA nForce RAID Device (D:\BootDrv\UDA\WinVista\sataraid\nvrd32.inf)
NVIDIA nForce Serial ATA Controller (D:\BootDrv\UDA\WinVista\sataraid\nvrd32.inf)
Hide drivers that are not compatible with hardware on this computer.
Browse
Rescan
Next

Figure 5

Step 4:

After the driver is loaded, the RAID drive will appear. Select the RAID drive and then click **Next** to continue the OS installation (Figure 6).

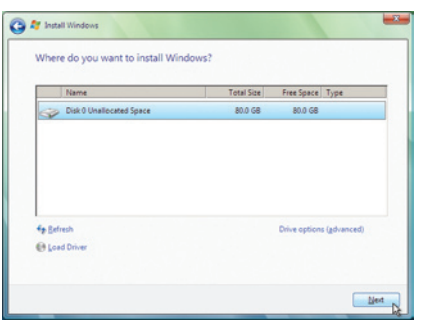
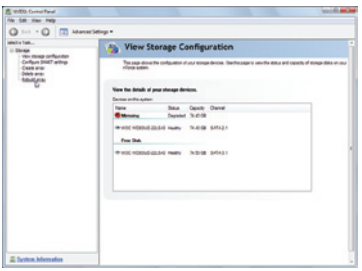


Figure 6

Rebuilding an Array:

Rebuilding is the process of restoring data to a hard drive from other drives in the array. Rebuilding applies only to fault-tolerant arrays such as RAID 1, RAID 10, and RAID 5 array. To replace the old drive, make sure to use a new drive of equal or greater capacity. The procedures below assume a new drive is added to replace a failed drive to rebuild a RAID 1 array.

Launch the **NVIDIA Control Panel** from **All Programs** in the Start Menu.



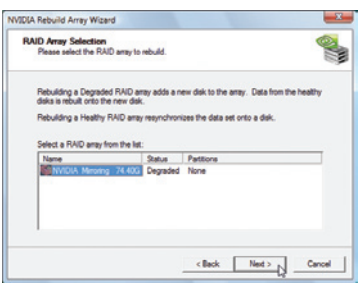
Step 1:

In NVIDIA Control Panel, click **Rebuild** array under Storage in the Select a Task pane.

NVIDIA Rebuild Array Wizard
Welcome to the NVIDIA Rebuild Array Wizard
This wizard will guide you through rebuilding your RAID array.
The NVIDIA RAID solution allows you to rebuild one of the array's member disks while the system is up and running, without disrupting user and application access to the data set.
Rebuilding an array can take up to a day to complete. This operation occurs in the background and will not impede your work. If you need to shutdown the computer, the rebuild will continue where it left off when you restart.
To continue, click Next.
< Back
Next >
Cancel

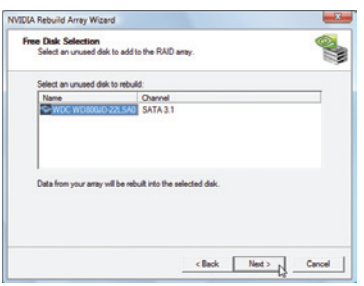
Step 2:

When the **NVIDIA Rebuild Array Wizard** appears, click **Next**.


NVIDIA Rebuild Array Wizard
RAID Array Selection
Please select the RAID array to rebuild.
Rebuilding a Degraded RAID array adds a new disk to the array. Data from the healthy disks is rebuilt onto the new disk.
Rebuilding a Healthy RAID array resynchronizes the data set onto a disk.
Select a RAID array from the list:
Name
Status
Partitions
NVIDIA Mirroring 74.40G
Degraded
None
< Back
Next >
Cancel

Step 3:

Select the array to rebuild and click **Next**.


NVIDIA Rebuild Array Wizard
Free Disk Selection
Select an unused disk to add to the RAID array.
Select an unused disk to rebuild:
Name
Channel
WDC WD800JD-22LSA0
SATA 3.1
Data from your array will be rebuilt into the selected disk.
< Back
Next >
Cancel

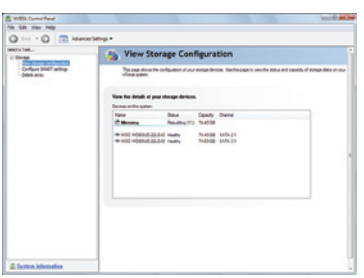
Step 4:

Select a drive to add to the array and click **Next**.

NVIDIA Rebuild Array Wizard
Completing the NVIDIA Rebuild Array Wizard
This is the final step of the NVIDIA Rebuild Array Wizard
You have chosen to rebuild the following disk:
WDC WD800JD-22LSA0
In the following RAID array:
NVIDIA Mirroring 74.40G
To begin rebuilding the disk, click Finish
< Back
Finish
Cancel

Step 5:

Click **Finish** to start the rebuilding process.



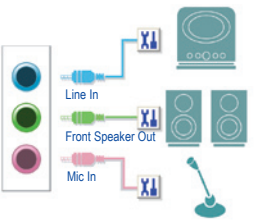
Step 6:

The rebuilding progress is displayed in the **View Storage Configuration** sub-menu.

5-2 Configuring Audio Input and Output

5-2-1 Configuring 2/4/5.1/7.1-Channel Audio

The motherboard provides three audio jacks on the back panel which support 2/4/5.1/7.1(Note)-channel audio. The picture to the right shows the default audio jack assignments.
The integrated HD (High Definition) audio provides jack retasking capability that allows the user to change the function for each jack through the audio driver.



- To install a microphone, connect your microphone to the Mic in jack and manually configure the jack for microphone functionality.
- Audio signals will be present on both of the front and back panel audio connections simultaneously. If you want to mute the back panel audio (only supported when using an HD front panel audio module), refer to instructions on the page 77.

High Definition Audio (HD Audio)

HD Audio includes multiple high quality digital-to-analog converters (DACs) that support 44.1KHz/48KHz/96KHz/192KHz sampling rate. HD Audio features multistreaming capabilities that allow multiple audio streams (in and out) to be simultaneously processed. For example, users can listen to MP3 music, have an Internet chat, make a telephone call over the Internet, and etc. all at the same time.

A. Configuring Speakers

(The following instructions use Windows Vista as the example operating system.)

Step 1:
After installing the audio driver, the **HD Audio Manager** icon will appear in the notification area. Double-click the icon to access the **HD Audio Manager**.

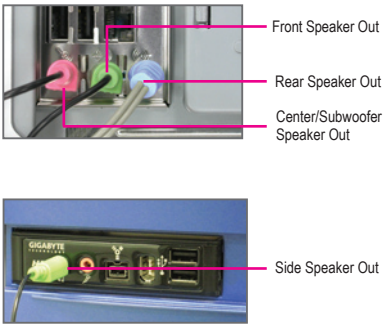
(Note) 2/4/5.1/7.1-Channel Audio Configurations:
Refer to the following for multi-channel speaker configurations.

- 2-channel audio: Headphone or Line out.
- 4-channel audio: Front speaker out and Rear speaker out.
- 5.1-channel audio: Front speaker out, Rear speaker out, and Center/Subwoofer speaker out.
- 7.1-channel audio: Front speaker out, Rear speaker out, Center/Subwoofer speaker out, and Side speaker out.

(Please refer to the configurations on next page.)

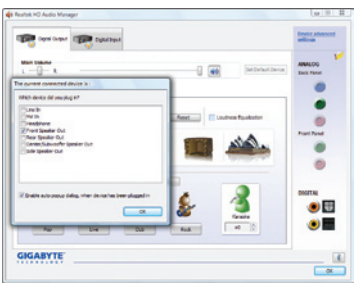
The pictures to the right show the 7.1-channel speaker configurations.

7.1-Channel Speakers:



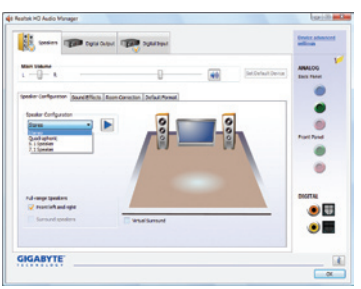
Step 2:

Connect an audio device to an audio jack. The **The current connected device is** dialog box appears. Select the device according to the type of device you connect. Then click **OK**.



Step 3:

On the **Speakers** screen, click the **Speaker Configuration** tab. In the **Speaker Configuration** list, select **Stereo**, **Quadraphonic**, **5.1 Speaker**, or **7.1 Speaker** according to the type of speaker configuration you wish to set up. Then the speaker setup is completed.

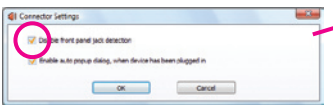


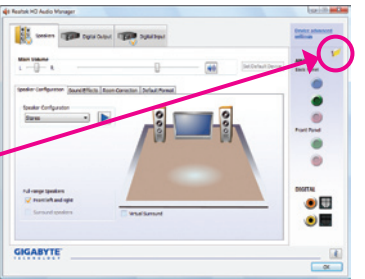
B. Configuring Sound Effect

You may configure an audio environment on the **Sound Effects** tab.

C. Activating an AC'97 Front Panel Audio Module

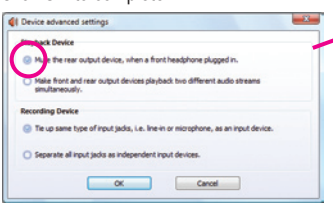
If your chassis provides an AC'97 front panel audio module, to activate the AC'97 functionality, click the tool icon on the **Speaker Configuration** tab. On the **Connector Settings** dialog box, select the **Disable front panel jack detection** check box. Click **OK** to complete.

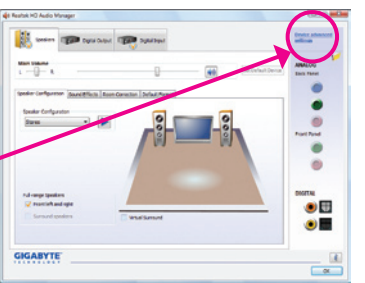




D. Muting the Back Panel Audio (For HD Audio Only)

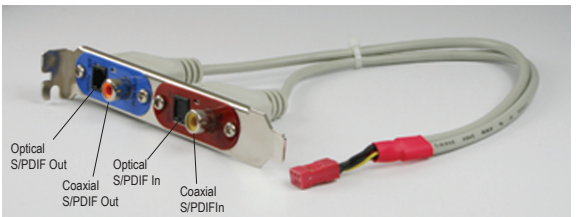
Click **Device advanced settings** on the top right corner on the **Speaker Configuration** tab to open the **Device advanced settings** dialog box. Select the **Mute the rear output device, when a front headphone plugged in** check box. Click **OK** to complete.


Device advanced settings
Playback Device
Mute the rear output device, when a front headphone plugged in.
Make front and rear output devices playback two different audio streams simultaneously.
Recording Device
Tie up same type of input jacks, i.e. line-in or microphone, as an input device.
Separate all input jacks as independent input devices.
OK
Cancel

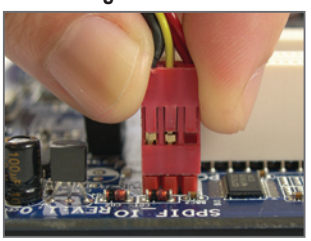


5-2-2 Configuring S/PDIF In/Out

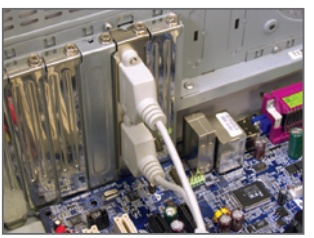
The S/PDIF In and Out cable (optional) provides S/PDIF In and S/PDIF Out functionalities.



A. Installing the S/PDIF In and Out Cable:



Step 1:
First, attach the connector at the end of the cable to the SPDIF_IO header on your motherboard.

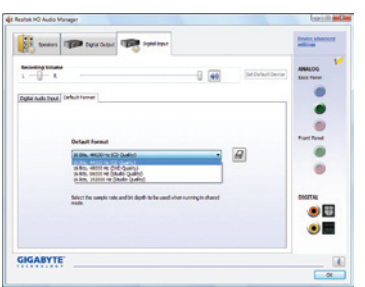


Step 2:
Secure the metal bracket to the chassis back panel with a screw.

B. Configuring S/PDIF In:

The S/PDIF In jacks on the SPDI/F In and Out cable allow you to input digital audio signals to the computer for audio processing.

Step:
After connecting the S/PDIF In device, access the **Digital Input** screen. Click the **Default Format** tab to select the default format. Click **OK** to complete.



(Note) The actual location of the SPDIF In and Out connector may differ by model.

C. Configuring S/PDIF Out:

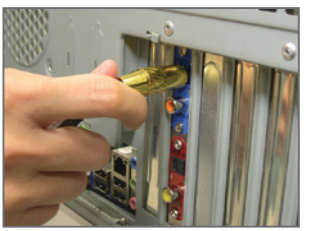
The S/PDIF out jacks can transmit audio signals to an external decoder for decoding to get the best audio quality.

C-1. Connecting a S/PDIF Out Cable:

Step:

Connect a S/PDIF coaxial cable or a S/PDIF optical cable (either one) to an external decoder for transmitting the S/PDIF digital audio signals.

S/PDIF Coaxial Cable

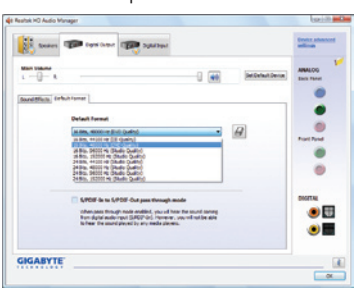


S/PDIF Optical Cable

C-2. Configuring S/PDIF Out:

Step:

On the **Digital Output** screen, click the **Default Format** tab and then select the sample rate and bit depth. Click **OK** to complete.



5-2-3 Configuring Microphone Recording

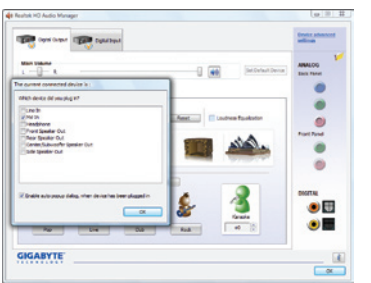
Step 1:

After installing the audio driver, the **HD Audio Manager** icon will appear in the notification area. Double-click the icon to access the **HD Audio Manager**.

Step 2:

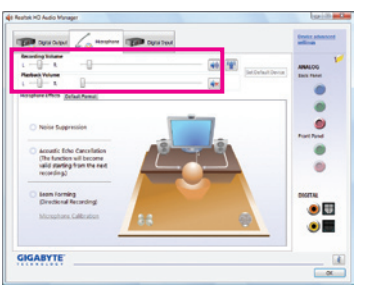
Connect your microphone to the Mic in jack (pink) on the back panel or the Mic in jack (pink) on the front panel. Then configure the jack for microphone functionality.

Note: The microphone functions on the front panel and back panel cannot be used at the same time.

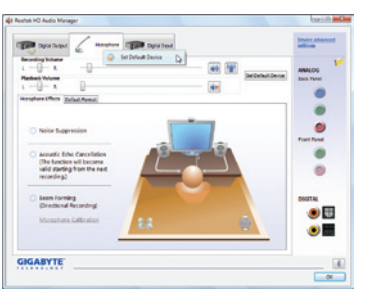


Step 3:

Go to the **Microphone** screen. Do not mute the recording volume, or you'll not be able to record the sound. To hear the sound being recorded during the recording process, do not mute the playback volume. It is recommended that you set the volumes at a middle level.

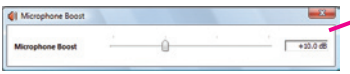


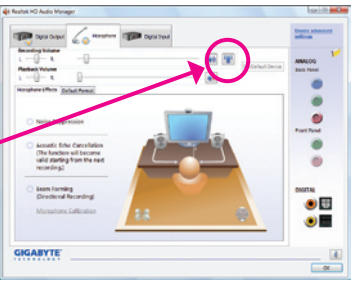
If you want to change the current sound input default device to microphone, right-click on **Microphone** and select **Set Default Device**.



Step 4:

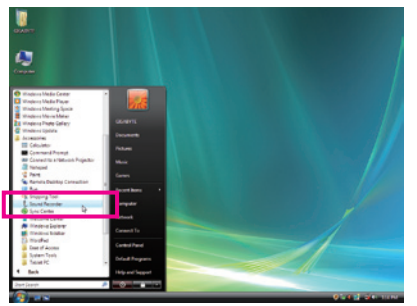
To raise the recording and playback volume for the microphone, click the **Microphone Boost** icon on the right of the **Recording Volume** slider and set the Microphone Boost level.





Step 5:

After completing the settings above, click **Start**, point to **All Programs**, point to **Accessories**, and then click **Sound Recorder** to begin the sound recording.



* Enabling Stereo Mix

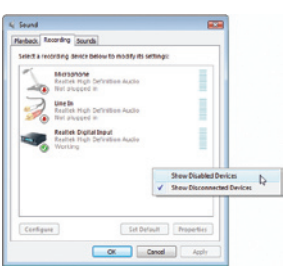
If the HD Audio Manager does not display the recording device you wish to use, refer to the steps below. The following steps explain how to enable Stereo Mix (which may be needed when you want to record sound from your computer).

Step 1:

Locate the **Volume** icon in the notification area and right-click on this icon. Select **Recording Devices**.

Step 2:

On the **Recording** tab, right-click on an empty space and select **Show Disabled Devices**.

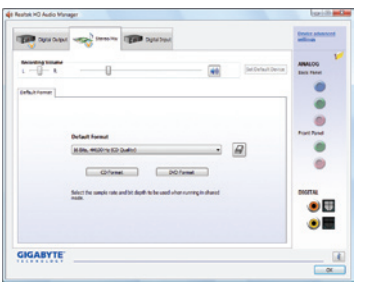


Step 3:

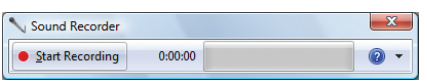
When the **Stereo Mix** item appears, right-click on this item and select **Enable**. Then set it as the default device.

Step 4:

Now you can access the **HD Audio Manager** to configure **Stereo Mix** and use **Sound Recorder** to record the sound.



5-2-4 Using the Sound Recorder



A. Recording Sound

1. Make sure you have connected the sound input device (e.g. microphone) to the computer.
2. To record the audio, click the **Start Recording** button Start Recording.
3. To stop recording audio, click the **Stop Recording** button Stop Recording.

Be sure to save the recorded audio file upon completion.

B. Playing the Recorded Sound

You can play your recording in a digital media player program that supports your audio file format.

5-3 Troubleshooting

5-3-1 Frequently Asked Questions

To read more FAQs for your motherboard, please go to the Support&Downloads\Motherboard\FAQ page on GIGABYTE's website.

Q: In the BIOS Setup program, why are some BIOS options missing?

A: Some advanced options are hidden in the BIOS Setup program. Press <Delete> to enter BIOS Setup during the POST. In the Main Menu, press <Ctrl>+<F1> to show the advanced options.

Q: Why is the light of my keyboard/optical mouse still on after the computer shuts down?

A: Some motherboards provide a small amount of standby power after the computer shuts down and that's why the light is still on.

Q: How do I clear the CMOS values?

A: For motherboards that have a CMOS_SW button, press this button to clear the CMOS values (before doing this, please turn off the computer and unplug the power cord). For motherboards that have a clearing CMOS jumper, refer to the instructions on the CLR_CMOS jumper in Chapter 1 to short the jumper to clear the CMOS values. If your board doesn't have this jumper, refer to the instructions on the motherboard battery in Chapter 1. You can temporarily remove the battery from the battery holder to stop supplying power to the CMOS, which will clear the CMOS values after about one minute.

Q: Why do I still get a weak sound even though I have turned my speaker to the maximum volume?

A: Make sure your speaker is equipped with an internal amplifier. If not, try a speaker with power/amplifier.

Q: Why cannot I install the onboard HD audio driver successfully? (For Windows XP only)

A: Step 1: First, make sure Service Pack 1 or Service Pack 2 has been installed (check in My Computer > Properties > General > System). If not, please update it from Microsoft's website. Then make sure the Microsoft UAA Bus Driver for High Definition Audio has been installed successfully (check in My Computer > Properties > Hardware > Device Manager > System Devices).

Step 2: Check if **Audio Device on High Definition Audio Bus** or **Unknown device** is present in **Device Manager** or **Sound, video, and game controllers**. If yes, please disable this device. (If not, skip this step.)

Step 3: Then go back to My Computer > Properties > Hardware > Device Manager > System devices and right-click on **Microsoft UAA Bus Driver for High Definition Audio** and select **Disable** and **Uninstall**.

Step 4: In **Device Manager**, right-click on the computer name and select **Scan for hardware changes**. When the **Add New Hardware Wizard** appears, click **Cancel**. Then install the onboard HD audio driver from the motherboard driver disk or download the audio driver from GIGABYTE's website to install.

For more details, go to the Support&Downloads\Motherboards\FAQ page on our website and search for "onboard HD audio driver."

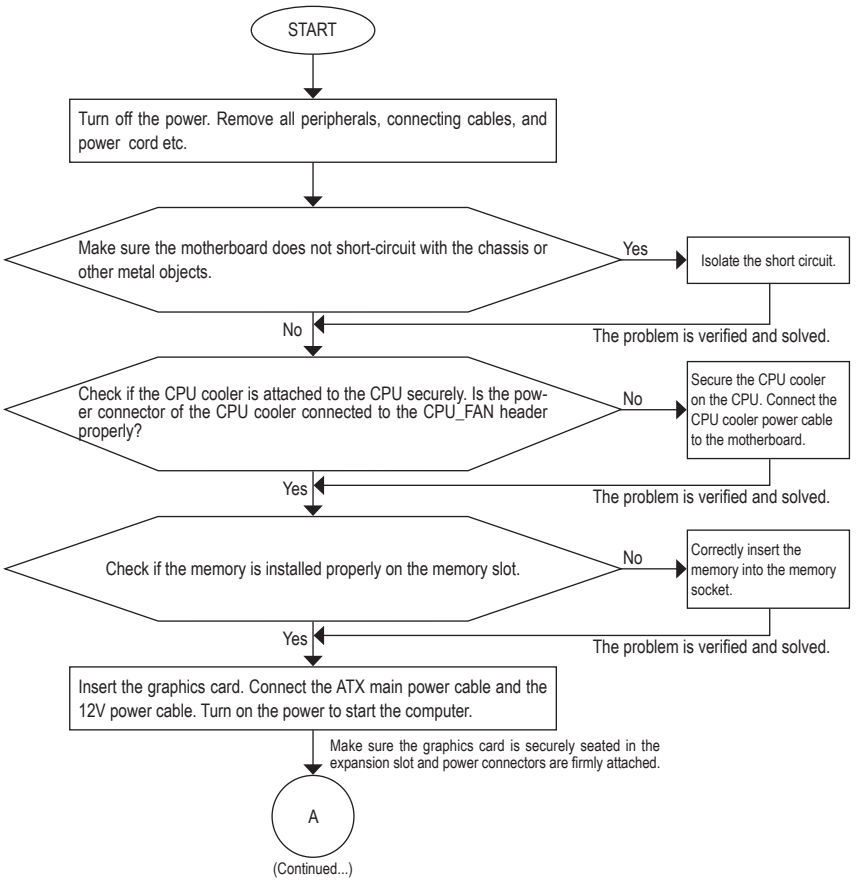
Q: What do the beeps emitted during the POST mean?

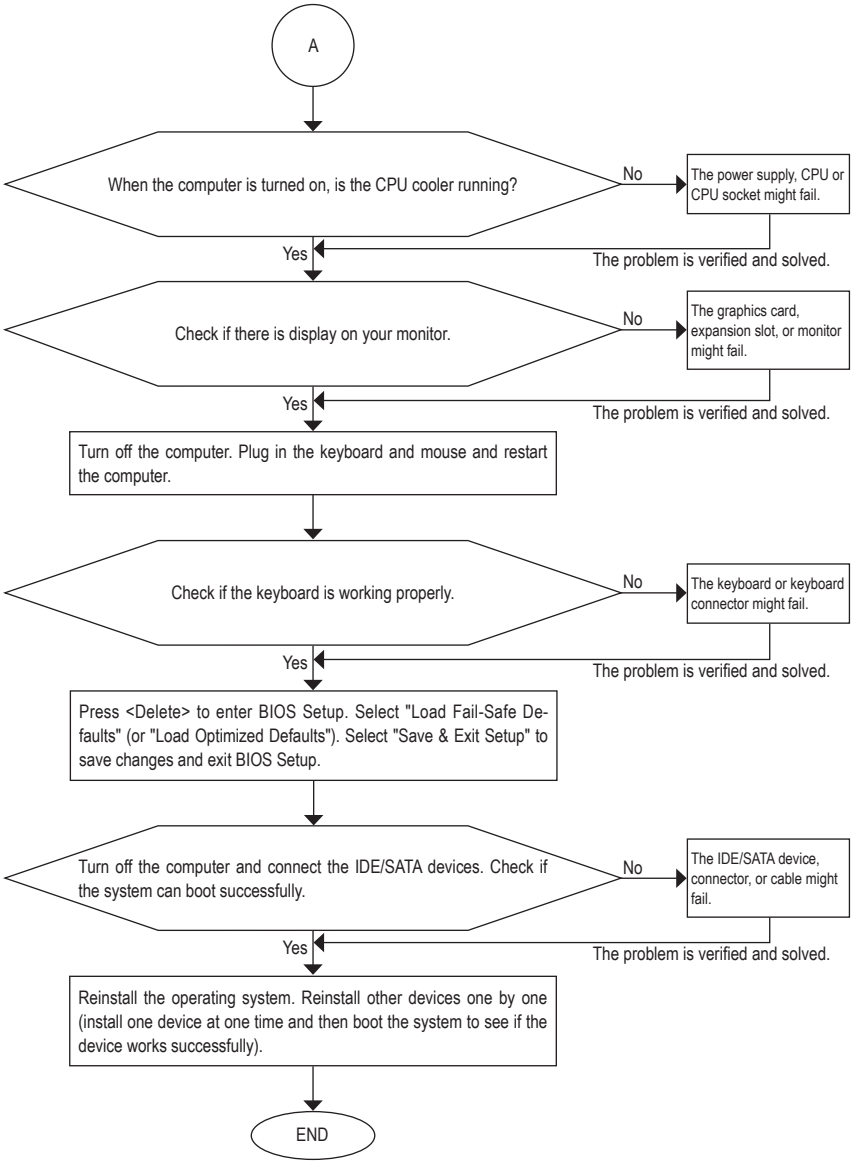
A: The following Award BIOS beep code descriptions may help you identify possible computer problems.
(For reference only.)

1 short: System boots successfully
2 short: CMOS setting error
1 long, 1 short: Memory or motherboard error
1 long, 2 short: Monitor or graphics card error
1 long, 3 short: Keyboard error
1 long, 9 short: BIOS ROM error
Continuous long beeps: Graphics card not inserted properly
Continuous short beeps: Power error

5-3-2 Troubleshooting Procedure

If you encounter any troubles during system startup, follow the troubleshooting procedure below to solve the problem.


START
Turn off the power. Remove all peripherals, connecting cables, and power cord etc.
Make sure the motherboard does not short-circuit with the chassis or other metal objects.
Yes
Isolate the short circuit.
No
The problem is verified and solved.
Check if the CPU cooler is attached to the CPU securely. Is the power connector of the CPU cooler connected to the CPU_FAN header properly?
No
Secure the CPU cooler on the CPU. Connect the CPU cooler power cable to the motherboard.
Yes
The problem is verified and solved.
Check if the memory is installed properly on the memory slot.
No
Correctly insert the memory into the memory socket.
Yes
The problem is verified and solved.
Insert the graphics card. Connect the ATX main power cable and the 12V power cable. Turn on the power to start the computer.
Make sure the graphics card is securely seated in the expansion slot and power connectors are firmly attached.
A
(Continued...)


A
When the computer is turned on, is the CPU cooler running?
No
The power supply, CPU or CPU socket might fail.
Yes
The problem is verified and solved.
Check if there is display on your monitor.
No
The graphics card, expansion slot, or monitor might fail.
Yes
The problem is verified and solved.
Turn off the computer. Plug in the keyboard and mouse and restart the computer.
Check if the keyboard is working properly.
No
The keyboard or keyboard connector might fail.
Yes
The problem is verified and solved.
Press <Delete> to enter BIOS Setup. Select "Load Fail-Safe Defaults" (or "Load Optimized Defaults"). Select "Save & Exit Setup" to save changes and exit BIOS Setup.
Turn off the computer and connect the IDE/SATA devices. Check if the system can boot successfully.
No
The IDE/SATA device, connector, or cable might fail.
Yes
The problem is verified and solved.
Reinstall the operating system. Reinstall other devices one by one (install one device at one time and then boot the system to see if the device works successfully).
END

If the procedure above is unable to solve your problem, contact the place of purchase or local dealer for help. Or go to the **Support&Downloads\Technical Service Zone** page to submit your question. Our customer service staff will reply you as soon as possible.

5-4 Regulatory Statements

Regulatory Notices

This document must not be copied without our written permission, and the contents there of must not be imparted to a third party nor be used for any unauthorized purpose. Contravention will be prosecuted. We believe that the information contained herein was accurate in all respects at the time of printing. GIGABYTE cannot, however, assume any responsibility for errors or omissions in this text. Also note that the information in this document is subject to change without notice and should not be construed as a commitment by GIGABYTE.

Our Commitment to Preserving the Environment

In addition to high-efficiency performance, all GIGABYTE motherboards fulfill European Union regulations for RoHS (Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment) and WEEE (Waste Electrical and Electronic Equipment) environmental directives, as well as most major worldwide safety requirements. To prevent releases of harmful substances into the environment and to maximize the use of our natural resources, GIGABYTE provides the following information on how you can responsibly recycle or reuse most of the materials in your "end of life" product.

Restriction of Hazardous Substances (RoHS) Directive Statement

GIGABYTE products have not intended to add and safe from hazardous substances (Cd, Pb, Hg, Cr+6, PBDE and PBB). The parts and components have been carefully selected to meet RoHS requirement. Moreover, we at GIGABYTE are continuing our efforts to develop products that do not use internationally banned toxic chemicals.

Waste Electrical & Electronic Equipment (WEEE) Directive Statement

GIGABYTE will fulfill the national laws as interpreted from the 2002/96/EC WEEE (Waste Electrical and Electronic Equipment) directive. The WEEE Directive specifies the treatment, collection, recycling and disposal of electric and electronic devices and their components. Under the Directive, used equipment must be marked, collected separately, and disposed of properly.

WEEE Symbol Statement

The symbol shown below is on the product or on its packaging, which indicates that this product must not be disposed of with other waste. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local government office, your household waste disposal service or where you purchased the product for details of environmentally safe recycling.

- When your electrical or electronic equipment is no longer useful to you, "take it back" to your local or regional waste collection administration for recycling.
- If you need further assistance in recycling, reusing in your "end of life" product, you may contact us at the Customer Care number listed in your product's user's manual and we will be glad to help you with your effort.

Finally, we suggest that you practice other environmentally friendly actions by understanding and using the energy-saving features of this product (where applicable), recycling the inner and outer packaging (including shipping containers) this product was delivered in, and by disposing of or recycling used batteries properly. With your help, we can reduce the amount of natural resources needed to produce electrical and electronic equipment, minimize the use of landfills for the disposal of "end of life" products, and generally improve our quality of life by ensuring that potentially hazardous substances are not released into the environment and are disposed of properly.

China Restriction of Hazardous Substances Table

The following table is supplied in compliance with China's Restriction of Hazardous Substances (China RoHS) requirements:

关于符合中国《电子信息产品污染控制管理办法》的声明
Management Methods on Control of Pollution from Electronic Information Products
(China RoHS Declaration)

产品中有毒有害物质或元素的名称及含量
Hazardous Substances Table

部件名称(Parts)	有毒有害物质或元素(Hazardous Substances)					
	铅(Pb)	汞(Hg)	镉(Cd)	六价铬(Cr(VI))	多溴联苯(PBB)	多溴二苯醚(PBDE)
PCB板 PCB	○	○	○	○	○	○
结构件及风扇 Mechanical parts and Fan	×	○	○	○	○	○
芯片及其他主动零件 Chip and other Active components	×	○	○	○	○	○
连接器 Connectors	×	○	○	○	○	○
被动电子元器件 Passive Components	×	○	○	○	○	○
线材 Cables	○	○	○	○	○	○
焊接金属 Soldering metal	○	○	○	○	○	○
助焊剂，散热膏，标签及其他耗材 Flux, Solder Paste, Label and other Consumable Materials	○	○	○	○	○	○

○:表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006标准规定的限量要求以下。
Indicates that this hazardous substance contained in all homogenous materials of this part is below the limit requirement SJ/T 11363-2006

×:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。
Indicates that this hazardous substance contained in at least one of the homogenous materials of this part is above the limit requirement in SJ/T 11363-2006

对销售之日的所受售产品，本表显示我公司供应链的电子信息产品可能包含这些物质。注意：在所售产品中可能会也可能不会含有所有所列的部件。
This table shows where these substances may be found in the supply chain of our electronic information products, as of the date of the sale of the enclosed products. Note that some of the component types listed above may or may not be a part of the enclosed product.

Contact Us

- **GIGA-BYTE TECHNOLOGY CO., LTD.**

Address: No.6, Bau Chiang Road, Hsin-Tien,
Taipei 231, Taiwan
TEL: +886-2-8912-4000
FAX: +886-2-8912-4003
Tech. and Non-Tech. Support (Sales/Marketing) :
http://ggts.gigabyte.com.tw
WEB address (English): http://www.gigabyte.com.tw
WEB address (Chinese): http://www.gigabyte.tw

- **G.B.T. INC. - U.S.A.**

TEL: +1-626-854-9338
FAX: +1-626-854-9339
Tech. Support:
http://rma.gigabyte.us
Web address: http://www.gigabyte.us

- **G.B.T. INC (USA) - Mexico**

Tel: +1-626-854-9338 x 215 (Soporte de habla hispano)
FAX: +1-626-854-9339
Correo: soporte@gigabyte-usa.com
Tech. Support:
http://rma.gigabyte.us
Web address: http://latam.giga-byte.com

- **Giga-Byte SINGAPORE PTE. LTD. - Singapore**

WEB address : http://www.gigabyte.sg

- **Thailand**

WEB address : http://th.giga-byte.com

- **Vietnam**

WEB address : http://www.gigabyte.vn

- **NINGBO G.B.T. TECH. TRADING CO., LTD. - China**

WEB address : http://www.gigabyte.cn
Shanghai
TEL: +86-21-63410999
FAX: +86-21-63410100
Beijing
TEL: +86-10-62102838
FAX: +86-10-62102848
Wuhan
TEL: +86-27-87851061
FAX: +86-27-87851330
GuangZhou
TEL: +86-20-87540700
FAX: +86-20-87544306
Chengdu
TEL: +86-28-85236930
FAX: +86-28-85256822
Xian
TEL: +86-29-85531943
FAX: +86-29-85510930
Shenyang
TEL: +86-24-83992901
FAX: +86-24-83992909

- **GIGABYTE TECHNOLOGY (INDIA) LIMITED - India**

WEB address : http://www.gigabyte.in

- **Saudi Arabia**

WEB address : http://www.gigabyte.com.sa

- **Gigabyte Technology Pty. Ltd. - Australia**

WEB address : http://www.gigabyte.com.au

- **G.B.T. TECHNOLOGY TRADING GMBH - Germany**

WEB address : http://www.gigabyte.de

- **G.B.T. TECH. CO., LTD. - U.K.**

WEB address : http://www.giga-byte.co.uk

- **Giga-Byte Technology B.V. - The Netherlands**

WEB address : http://www.giga-byte.nl

- **GIGABYTE TECHNOLOGY FRANCE - France**

WEB address : http://www.gigabyte.fr

- **Sweden**

WEB address : http://www.gigabyte.se

- **Italy**

WEB address : http://www.giga-byte.it

- **Spain**

WEB address : http://www.giga-byte.es

- **Greece**

WEB address : http://www.gigabyte.com.gr

- **Czech Republic**

WEB address : http://www.gigabyte.cz

- **Hungary**

WEB address : http://www.giga-byte.hu

- **Turkey**

WEB address : http://www.gigabyte.com.tr

- **Russia**

WEB address : http://www.gigabyte.ru

- **Poland**

WEB address : http://www.gigabyte.pl

- **Ukraine**

WEB address : http://www.gigabyte.ua

- **Romania**

WEB address : http://www.gigabyte.com.ro

- **Serbia**

WEB address : http://www.gigabyte.co.rs

- **Kazakhstan**

WEB address : http://www.gigabyte.kz

You may go to the GIGABYTE website, select your language in the language list on the top right corner of the website.

- **GIGABYTE Global Service System**

GIGABYTE
GTS Global Technical Service
Welcome to GIGABYTE Service system. If you want to submit new question or check our response, please enter your E-Mail address and press the button to log in.
Your Email :
繁體中文
Deutsch
简体中文
Français
Polski
English

To submit a technical or non-technical (Sales/Marketing) question, please link to:
http://ggts.gigabyte.com.tw
Then select your language to enter the system.